



## North American Energy Standards Board

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Phone: (713) 356-0060, Fax: (713) 356-0067, E-mail: [naesb@naesb.org](mailto:naesb@naesb.org)  
Home Page: [www.naesb.org](http://www.naesb.org)

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### NAESB WHOLESALE ELECTRIC QUADRANT EXECUTIVE COMMITTEE MEETING

#### ASSEMBLED MEETING MATERIALS

OCTOBER 27, 2009



# North American Energy Standards Board

1301 Fannin, Suite 2350, Houston, Texas 77002  
Phone: (713) 356-0060, Fax: (713) 356-0067, E-mail: [naesb@naesb.org](mailto:naesb@naesb.org)  
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## NAESB WHOLESALE ELECTRIC QUADRANT EXECUTIVE COMMITTEE MEETING Dominion Innsbrook Offices, Glen Allen, VA - Tuesday, October 27, 2009 – 10:00 am to 4:00 pm E

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<b>1. Welcome</b>		
<ul style="list-style-type: none"><li>Antitrust Guidelines <a href="http://www.naesb.org/misc/antitrust_guidance.doc">http://www.naesb.org/misc/antitrust_guidance.doc</a></li><li>Welcome to members and attendees</li><li>Quorum Establishment: Roll Call of WEQ EC Members and Alternates: <a href="http://www.naesb.org/pdf4/ec_terms.pdf">http://www.naesb.org/pdf4/ec_terms.pdf</a> (EC) and <a href="http://www.naesb.org/pdf4/alt_ec_members.pdf">http://www.naesb.org/pdf4/alt_ec_members.pdf</a> (EC Alt)</li><li>Adoption of WEQ Agenda (simple majority) <a href="http://www.naesb.org/pdf4/ec102709a.doc">http://www.naesb.org/pdf4/ec102709a.doc</a></li></ul>	Guidelines  EC Roster EC Alternate Roster  Agenda	1  2 7 12
<b>2. Wholesale Electric Quadrant Draft Minutes (simple majority to approve)</b>		
<ul style="list-style-type: none"><li>Adoption of the WEQ EC Meeting Minutes: August 18, 2009: <a href="http://www.naesb.org/pdf4/weq_ec081809dm.doc">http://www.naesb.org/pdf4/weq_ec081809dm.doc</a></li></ul>	Draft August 18, 2009 Minutes	20
<b>3. Review and vote on 2009 WEQ Annual Plan Items 1(a); 3(a)(vii); R05020: 1.8.1 e-Tag Specifications and Schema (super-majority vote)</b>		
<ul style="list-style-type: none"><li>Recommendation REVISED 1.8.1 Specification- clean: <a href="http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a2.doc">http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a2.doc</a></li><li>Recommendation REVISED 1.8.1 Specification – redlined: <a href="http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a1.doc">http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a1.doc</a></li><li>Recommendation 1.8.1 Schema – .xds format: <a href="http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a4.xsd">http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a4.xsd</a></li><li>Recommendation 1.8.1 Schema – word format: <a href="http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a3.doc">http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a3.doc</a></li><li>Formal Comment Period ended October 5, 2009:<ul style="list-style-type: none"><li>D. Landers, New Brunswick System Operator: <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409nbso.pdf">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409nbso.pdf</a></li><li>S. Ashbaker, WECC - Comments: <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_1.doc">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_1.doc</a> and redlines <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_2.doc">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_2.doc</a></li><li>T. Kannel, MCG Energy: <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409mcg_energy.doc">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409mcg_energy.doc</a></li></ul></li></ul>	Recommendation Clean  Recommendation Redlined  Schema – xds formatted  Schema – Word formatted  Comments - NBSO  Comments WECC with redlines  Comments MCG Energy	28  154  293  333  396  398  528



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## NAESB WHOLESALE ELECTRIC QUADRANT EXECUTIVE COMMITTEE MEETING Dominion Innsbrook Offices, Glen Allen, VA - Tuesday, October 27, 2009 – 10:00 am to 4:00 pm E

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<ul style="list-style-type: none"><li>J. Ray, OATI: <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409oati.pdf">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409oati.pdf</a></li><li>NAESB Standards Review Subcommittee: <a href="http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409weq_srs.doc">http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409weq_srs.doc</a></li><li>NAESB Joint Electric Scheduling Subcommittee (JESS): <a href="http://www.naesb.org/pdf4/weq_ec102709w5.doc">http://www.naesb.org/pdf4/weq_ec102709w5.doc</a></li></ul>	Comments OATI Comments SRS Comments JESS	530 532 533
<b>4. 2009 WEQ Annual Plan Items 1(a) R05020 and 3(a)(vii) – Coordinate Interchange – (super-majority vote)</b>		
<ul style="list-style-type: none"><li>Recommendation: <a href="http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec.doc">http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec.doc</a></li><li>Attachment Clean: <a href="http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach2.doc">http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach2.doc</a></li><li>Attachment Redlined: <a href="http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach1.doc">http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach1.doc</a></li><li>Comments due October 8, 2009:<ul style="list-style-type: none"><li>E Skiba, Midwest ISO <a href="http://naesb.org/pdf4/weq_090909weq_srs.doc">http://naesb.org/pdf4/weq_090909weq_srs.doc</a></li><li>E Davis, Entergy: <a href="http://naesb.org/pdf4/weq_090909entergy.doc">http://naesb.org/pdf4/weq_090909entergy.doc</a></li><li>J Ray, OATI: <a href="http://naesb.org/pdf4/weq_090909oati.pdf">http://naesb.org/pdf4/weq_090909oati.pdf</a></li><li>C Wesley, PJM: : <a href="http://naesb.org/pdf4/weq_090909pjm.doc">http://naesb.org/pdf4/weq_090909pjm.doc</a></li><li>NAESB Joint Electric Scheduling Subcommittee (JESS): <a href="http://www.naesb.org/pdf4/weq_ec102709w4.doc">http://www.naesb.org/pdf4/weq_ec102709w4.doc</a></li></ul></li></ul>	Recommendation Attachment Clean Attachment Redlined Comments Midwest ISO Comments Entergy Comments OATI Comments PJ Comments JESS	673 677 701 733 734 768 769 770
<b>5. Discuss and vote (simple majority) in minor corrections:</b>		
<ul style="list-style-type: none"><li>Minor Correction submitted by J.T. Wood October 15, 2009: <a href="http://www.naesb.org/pdf4/weq_ec102709w2.doc">http://www.naesb.org/pdf4/weq_ec102709w2.doc</a></li></ul>	Minor Correction	804
<b>6. Subcommittee Updates (meeting materials for updates will be provided by leadership as they are available):</b>		
<ul style="list-style-type: none"><li>Triage Subcommittee: <a href="http://www.naesb.org/pdf4/tr101509agenda.doc">http://www.naesb.org/pdf4/tr101509agenda.doc</a></li><li>Business Practices Subcommittee (BPS): <a href="http://www.naesb.org/pdf4/weq_ec102709w3.ppt">http://www.naesb.org/pdf4/weq_ec102709w3.ppt</a><ul style="list-style-type: none"><li>TLR</li><li>Time Inadvertent Management Task Force</li></ul></li></ul>	Triage Agenda BPS Update	806 808



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<ul style="list-style-type: none"><li>DSM-EE Subcommittee – Discussion on WEQ Phase 2 effort and scope with possible simple majority vote, Materials provided from E. Winkler: <a href="http://www.naesb.org/misc/pages_transcript_weq_ec_020309.pdf">http://www.naesb.org/misc/pages_transcript_weq_ec_020309.pdf</a></li><li>OASIS Subcommittee</li><li>Joint Electric Scheduling Subcommittee (JESS)</li><li>Standards Review Subcommittee (SRS): <a href="http://www.naesb.org/pdf4/weq_ec102709w1.ppt">http://www.naesb.org/pdf4/weq_ec102709w1.ppt</a></li><li>Glossary Efforts</li></ul>	Excerpts from transcript	814
<b>7. Review, discuss, identify changes and vote to approve changes to the 2009 Annual Plan to be proposed to the Board of Directors (simple majority vote for EC endorsement of proposed changes to be forwarded for Board approval)</b>		
<ul style="list-style-type: none"><li>2009 Annual Plan: <a href="http://www.naesb.org/pdf4/draft_weq_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_weq_2009_annual_plan.doc</a></li></ul>	2009 Annual Plan	845
<b>8. Discuss 2010 Annual Plan effort</b>		
<ul style="list-style-type: none"><li>2010 Annual Plan effort: <a href="http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc">http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc</a></li></ul>	2010 Annual Plan Effort	856
<b>9. Miscellaneous Process Issues for discussion:</b>		
<ul style="list-style-type: none"><li>Overlapping WEQ Subcommittee meetings</li><li>Timing on Informal Comments</li></ul>		
<b>10. Board of Directors, Board Committee and Regulatory Updates (no votes or action to be taken):</b>		
<ul style="list-style-type: none"><li>Board Updates – Board Meeting September 24, 2009:</li><li>Wholesale Gas and Retail key activities – WGQ Annual Plan, Retail Annual Plan - <a href="http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc</a> (WGQ), <a href="http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc</a> (Retail)</li><li>Update on Board Retail Structure Review Committee efforts</li><li>Update on WEQ Board Deliberations on Segment Structure</li><li>Regulatory Efforts:</li></ul>	WGQ Annual Plan Retail Annual Plan	859 864
<ul style="list-style-type: none"><li>October 9, 2009 - NAESB Report to the FERC regarding errata to WEQ Standards, Versions 001, 002.0 and 002.1 (Docket No. RM05-5 et al): <a href="http://www.naesb.org/pdf4/ferc100909_weq_errata_filing.pdf">http://www.naesb.org/pdf4/ferc100909_weq_errata_filing.pdf</a></li><li>FCC Comments, October 2, 2009: <a href="http://www.naesb.org/pdf4/fcc100209_naesb_filing.pdf">http://www.naesb.org/pdf4/fcc100209_naesb_filing.pdf</a></li></ul>	10-9-09 Filing FCC Filing	870 879



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**Dominion Innsbrook Offices, Glen Allen, VA - Tuesday, October 27, 2009 – 10:00 am to 4:00 pm E**

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<b>11. Other Business</b>		
<ul style="list-style-type: none"><li>• 2010 Schedule: <a href="http://www.naesb.org/misc/2010_schedule.pdf">http://www.naesb.org/misc/2010_schedule.pdf</a></li><li>• Election of Officers for 2010</li></ul>	2010 Calendar	881
<b>12. Adjourn</b>		

*Attire – Business Casual*



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### NAESB ANTITRUST GUIDELINES STATEMENT

#### ANTITRUST GUIDELINES

- The following guidelines will be reviewed by counsel at the meeting. The meeting will be monitored, transcribed, and minutes will be taken. The guidelines are as follows:

Antitrust guidelines direct meeting participants to avoid discussion of topics or behavior that would result in anticompetitive behavior including: restraint of trade and conspiracies to monopolize, unfair or deceptive business acts or practices, price discriminations, division of markets, allocation of production, imposition of boycotts, and exclusive dealing arrangements.

Any views, opinions or positions presented or discussed by meeting participants are the views of the individual meeting participants and their organizations. Any such views, opinions or positions are not the views, positions or opinions of NAESB, the NAESB Board of Directors, or any NAESB Committee or Subcommittee, unless specifically noted otherwise.

As it is not the purpose of the meeting to discuss any antitrust topics, if anyone believes we are straying into improper areas, please let us know and we will redirect the conversation.



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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE TERMS – Wholesale Gas Quadrant

<b>PRODUCERS SEGMENT</b>		<b>TERM END:</b>
Jim Busch	Director of Energy Policy and Regulation, BP Energy Company	12-31-2010
Pete Frost	Director – Regulatory Affairs, ConocoPhillips Gas and Power Marketing	12-31-2010
Chuck Cook	Manager - Regulatory Affairs, Chevron	12-31-2009
Richard D. Smith	Regulatory & Compliance Manager, Noble Energy, Inc.	12-31-2009
Mike Shepard	General Counsel, Mewbourne Oil Company	12-31-2009
<b>PIPELINE SEGMENT</b>		
Bill Griffith	Consultant, El Paso Natural Gas Company	12-31-2011
Kathryn Burch	Project Manager, Standards and Regulatory, Spectra Energy Transmission	12-31-2011
Dale Davis	Consultant, Williams Gas Pipeline	12-31-2010
Randy Young	Vice President - Regulatory Compliance and Corporate Services, Boardwalk Pipeline Partners, LP	12-31-2009
Kim Van Pelt	Regulatory Compliance Manager, Panhandle Eastern Pipe Line	12-31-2009
<b>LOCAL DISTRIBUTION COMPANY (LDC) SEGMENT</b>		
Rodger Schwecke	Director – Energy Markets and Capacity Products, Sempra Energy - Southern California Gas	12-31-2011
V A C A N C Y		12-31-2011
Paul Buckley	Director of Rates and Regulatory Affairs, Washington Gas	12-31-2010
<b>Mike Novak</b>	Assistant General Manager, National Fuel Gas Distribution	12-31-2009
Craig Colombo	Energy Trader III, Dominion Resources	12-31-2009
<b>END USERS SEGMENT</b>		
Kelly Daly	Partner, Stinson Morrison Hecker, LLP (rep. Arizona Public Service Company)	12-31-2010
Valerie Crockett	Senior Program Manager, Energy Markets & Policy, Tennessee Valley Authority	12-31-2010
Lori-Lynn C. Pennock	Senior Fuel Supply Analyst, Salt River Project	12-31-2009
Dona Gussow	Manager, Contract Administration, Florida Power and Light Company	12-31-2009
Tina Burnett	Natural Gas Operations Administrator, The Boeing Company	12-31-2009
<b>SERVICES SEGMENT</b>		
Steve Abbey	Manager of Regulatory Affairs in the Marketing Department of Anadarko	12-31-2010
Lisa Simpkins	Vice President, Energy Policy – Natural Gas, Constellation Energy Commodities Group	12-31-2010
Leigh Spangler	CEO, Latitude Technologies, Inc.	12-31-2009
<b>Jim Buccigross</b>	Vice President, 8760 Inc.	12-31-2009
Jeff Jarvis	Senior Counsel, EnCana Marketing (USA), Inc.	12-31-2009

**EXECUTIVE COMMITTEE OFFICERS:** Jim Buccigross is WGQ chairman of the Executive Committee, Mike Novak is WGQ vice chairman; Mike Novak is the RGQ chairman, Ruth Kiselewich is the REQ chairman, Kathy York is the WEQ chairman and Matt Goldberg is the WEQ vice chairman.



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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE TERMS – Retail Electric Quadrant

<b>SERVICE PROVIDERS/SUPPLIERS SEGMENT</b>		<b>TERM END:</b>
Bill Barkas	Manager of Retail State Government Relations, Dominion Retail, Inc.	12-31-2009
Jim Minneman	Controller, PPL Solutions, LLC	12-31-2009
Jennifer Teel	Vice President of Client Services, E:SO ( <i>Formerly EC Power</i> )	12-31-2010
Susan Munson	ERCOT Retail Market Liaison, Electric Reliability Council of Texas (ERCOT)	12-31-2010
<b>UTILITIES SEGMENT</b>		
Ruth Kiselewich	Director, Demand Side Management Programs, Baltimore Gas & Electric Company	12-31-2009
Patrick Eynon	Supervisor – Retail Access, Ameren Services	12-31-2009
Judy Ray	Industrial Segment Manager – Contract Administrator, Alabama Power Company	12-31-2010
Mary Edwards	Senior Customer Choice Analyst – Regulation and Competition, Dominion Virginia Power	12-31-2010
<b>END USERS/PUBLIC AGENCIES SEGMENT</b>		
V A C A N C Y		12-31-2009
V A C A N C Y		12-31-2009
Annunciata E. Marino	Utility Energy Policy and Technology Analyst, Pennsylvania Public Utility Commission	12-31-2010
V A C A N C Y		12-31-2010



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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE TERMS – Wholesale Electric Quadrant

TRANSMISSION SEGMENT		TERM END:	SUBSEGMENT:
Patrick McGovern	Manager - System Services, Georgia Transmission Corporation	12-31-2009	Muni/Coop
Wendy D. Weathers	System Operations, Salt River Project	12-31-2010	Fed/State/Prov.
Daryl McGee	Manager – Transmission Services, Southern Company Services	12-31-2010	IOU
Edward Davis	Policy Consultant, Entergy Services, Inc.	12-31-2009	IOU
Mark Hackney	Section Leader of Transmission Services Trading, Arizona Public Service	12-31-2010	at large
Bob Harshbarger	OASIS Trading Manager, Puget Sound Energy	12-31-2009	at large
Michelle Mizumori	Director of Market – Operations Interface, Western Electricity Coordinating Council (WECC)	12-31-2009	At-Large
GENERATION SEGMENT			
William J. Gallagher	Special Contracts Chief, Vermont Public Power Supply Authority	12-31-2009	Muni/Coop
<b>Kathy York</b>	Sr. Energy Markets & Policy Specialist, Tennessee Valley Authority	12-31-2010	Fed/State/Prov.
Jalal Babik	Manager – Electric Policy, Dominion Resource Services, Inc.	12-31-2010	IOU
John Ciza	Project Manager Energy Policy and Regulatory Affairs, Southern Company Services	12-31-2009	IOU
V A C A N C Y		12-31-2010	Merchant
Trent Carlson	Vice President – Regulatory Affairs, RRI Energy Services, Inc.	12-31-2009	at large
Neal Balu	Director of Transmission Policy, Wisconsin Public Service Corporation	12-31-2009	at large
MARKETERS/BROKERS SEGMENT			
Mack Thompson	Vice President – Power Supply Services, American Municipal Power, Inc.	12-31-2010	Muni/Coop
Belinda Thornton	General Manager - Energy Origination, Tennessee Valley Authority	12-31-2009	Fed/State/Prov.
V A C A N C Y		12-31-2010	at large
Richard Lehman	Supply and Trading, Salt River Project	12-31-2009	at large
John Apperson	Director – Commercial and Trading, PacifiCorp Energy	12-31-2010	IOU
Roy True	Manager of Regulatory and Markets Development, ACES Power Marketing	12-31-2009	at large
Barry Green	Barry Green Consulting (representing Electric Power Supply Association (EPSA))	12-31-2009	at large



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<b>DISTRIBUTION/LOAD SERVING ENTITIES (LSE) SEGMENT</b>		<b>TERM END:</b>	<b>SUBSEGMENT:</b>
Ray Phillips	Manager of Compliance and Special Projects, Alabama Municipal Electric Authority	12-31-2010	Muni/Coop
V A C A N C Y		12-31-2009	at large
Alan Pritchard	Senior Engineer, Duke Energy Corporation	12-31-2010	IOU
Jeffrey C. Mueller	Manager - ERO / RE Policy and Standards Interface, Public Service Electric and Gas Company	12-31-2009	IOU
Robert Martinko	Consultant FERC Compliance, FirstEnergy Service Company	12-31-2010	at large
Syd Berwager	Industry Restructuring Project Manager, Bonneville Power Administration/Power Business Line	12-31-2009	Other
Andy Rodriguez	Manager of Business Practice Coordination, NERC	12-31-2009	At-Large
<b>END USERS SEGMENT</b>			
V A C A N C Y		12-31-2009	at large
Aaron Breidenbaugh	Senior Manager - Regulatory Affairs and Public Policy - New York, EnerNOC, Inc.	12-31-2010	at large
Lou Ann Westerfield	Policy Strategist, Idaho Public Utilities Commission, rep. National Association of Regulatory Utility Commissioners	12-31-2010	Regulator
V A C A N C Y		12-31-2009	at large
V A C A N C Y		12-31-2010	at large
V A C A N C Y		12-31-2009	at large
Paul Sorenson	Director-Central Markets Strategy, Open Access Technology International, Inc.	12-31-2009	At-Large
<b>INDEPENDENT GRID OPERATORS/PLANNERS</b>			
Thomas Bowe	Executive Director – Reliability Integration, PJM Interconnection, LLC	12-31-2010	
Jim Castle	Manager, Grid Operations, New York Independent System Operator, Inc.	12-31-2010	
Matt Goldberg	Director Reliability & Operations Compliance ISO New England, Inc.	12-31-2010	
Anjali Sheffrin	Director Market and Product Development and Chief Economist, California ISO	12-31-2010	
Joel Mickey	Manager Market Operations Support, Electric Reliability Council of Texas	12-31-2009	
Ed Skiba	Technical Manager, Standards Compliance & Strategy, Midwest ISO	12-31-2009	
Charles Yeung	Executive Director Interregional Affairs, Southwest Power Pool	12-31-2009	



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<b>SERVICE PROVIDERS/SUPPLIERS SEGMENT</b>		<b>TERM END:</b>
V A C A N C Y		12-31-2009
V A C A N C Y		12-31-2009
Richard Zollars	Director, Data and Billing, Dominion Retail, Inc.	12-31-2010
V A C A N C Y		12-31-2010
<b>DISTRIBUTORS SEGMENT</b>		
Dan Jones	Supervisor, Certified Supplier Business Center, Duke Energy	12-31-2009
Leslie H. Nishida	Manager Gas Regulatory Services, Wisconsin Public Service Corporation	12-31-2009
<b>Michael Novak</b>	Assistant General Manager, National Fuel Gas Distribution Corporation	12-31-2010
V A C A N C Y		12-31-2010
<b>END USERS/PUBLIC AGENCIES SEGMENT</b>		
V A C A N C Y		12-31-2010
V A C A N C Y		12-31-2010
V A C A N C Y		12-31-2009
V A C A N C Y		12-31-2009



## North American Energy Standards Board

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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE ALTERNATES – Wholesale Gas Quadrant

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#### END USER SEGMENT

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Paul A. Jones	Senior Marketing Representative, Salt River Project
Art Morris	Gas Originator, Florida Power & Light Company
Kenneth Nordlander	Fuel Procurement, Arizona Public Service Company
Katherine C. Zeitlin	Legal Department, Arizona Public Service Company

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#### DISTRIBUTION SEGMENT

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Rick Ishikawa	Interconnect Account Manager in Capacity Products Group, Southern California Gas Company
Phil Precht	Management Consultant, Pricing and Regulatory Services Department, Baltimore Gas and Electric Company
Donald Petersen	Senior Gas Resource Analyst, Pacific Gas and Electric Company
Jim Blasiak	Specialist Federal Regulatory Affairs, Washington Gas Light Company
George Simmons	FERC Specialist, NiSource Inc.
Scott Butler	Project Manager, Energy Markets Policy Group, Consolidated Edison Company of New York, Inc.

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#### PIPELINE SEGMENT

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Bill Grygar	Vice President, Panhandle Eastern Pipe Line
Scott Hansen	Questar Pipeline Company
Iris King	Director, Technical and Marketing Support, Dominion Transmission, Inc.
Paul Love	Director, Electronic Customer Services, Natural Gas Pipe Line Company of America
Mark Gracey	Consultant, Tennessee Gas Pipeline Company
Christopher Burden	Consultant e-Commerce & Service Delivery, Williams Gas Pipeline
Tom Gwilliam	Iroquois Gas Transmission System

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#### PRODUCER SEGMENT

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David Ogden	Manager, Marketing Administration, Dominion Exploration & Production, Inc.
Rhonda Denton	Regulatory Affairs, BP Energy Company

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#### SERVICES SEGMENT

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Keith Sappenfield	Director, US Regulatory Affairs, Midstream and Marketing, EnCana Oil and Gas (USA), Inc.
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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE ALTERNATES – Retail Electric Quadrant

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#### UTILITIES SEGMENT

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Keith P. Hock	Director ARES Business Center, Ameren Services Company
Ripley Newcomb	Manager – Conservation and Load Management Program, Dominion
Phil Precht	Management Consultant – Pricing & Regulatory Services Department, Baltimore Gas and Electric Company
William J. Welzant	Principal Supplier Services Analyst, Supplier Account Management, Baltimore Gas and Electric

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#### END USERS/PUBLIC AGENCIES SEGMENT

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#### SERVICE PRODUCERS/SUPPLIERS SEGMENT

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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE ALTERNATES – Wholesale Electric Quadrant

<b>END USER SEGMENT</b>		<b>SUB-SEGMENT</b>
Robert Schwermann	Manager – Customer Care, Open Access Technology International, Inc.	At-Large
<b>DISTRIBUTION/LSE SEGMENT</b>		<b>SUB-SEGMENT</b>
Gerry Adamski	Vice President of Standards, NERC	At-Large
Paul K. Jett	Director – RTO Activities, Duke Energy Corporation	IOU
Lee Hall	Coordination Manager – Power Services, Bonneville Power Administration	Other
<b>GENERATION SEGMENT</b>		<b>SUB-SEGMENT</b>
Joel Dison	Project Manager, Southern Company Generation and Energy Marketing	IOU
Lou Oberski	Director – Electric Market Policy, Dominion Resources Services, Inc	IOU
Francis Halpin	Bonneville Power Administration	Fed/State/Prov.
<b>MARKETER/BROKER SEGMENT</b>		<b>SUB-SEGMENT</b>
Jeff Ackerman	Manager, CRSP-Energy Mgmt., Western Area Power Administration	Fed/State/Prov
Brenda Anderson	Bonneville Power Administration	Fed/State/Prov
Valerie Crockett	Senior Program Manager, Energy Markets & Policy, Tennessee Valley Authority	Fed/State/Prov
<b>TRANSMISSION SEGMENT</b>		<b>SUB-SEGMENT</b>
Barbara Rehman	Policy Development & Analysis, Bonneville Power Administration	Fed/State/Prov.
Chuck Feagans	Tennessee Valley Authority	Fed/State/Prov.
Shay Labray	Transmission Strategy Consultant, PacifiCorp	IOU
Jane Daly	Rate & Regulatory Advisor, Arizona Public Service Company	IOU
Marceline Otondo	Regulatory Compliance Advisory, Arizona Public Service Company	IOU
Narinder Saini	Policy Consultant, Entergy Services, Inc.	IOU
J.T. Wood	Southern Company Services	IOU
Dean Uleh	Principal Engineer – Transmission Policy and Services, Southern Company Services, Inc.	IOU
Ross Kovacs	Transmission Strategic Coordinator, Georgia Transmission Corporation	Muni/Coop
W. Shannon Black	Market Issues and Standards Processes Manager, Western Electricity Coordinating Council	At-Large



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INDEPENDENT GRID OPERATORS/PLANNERS SEGMENT	SUB-SEGMENT
Brent Kingsford	Sr. Operations Regulatory Specialist, California ISO (CAISO)
Paul Wattles	Supervisor Demand Side Programs, Electric Reliability Council of Texas (ERCOT)
Bill Blevins	Sr. Market Support Analyst, Electric Reliability Council of Texas (ERCOT)
Robert Coughlin	Principal Scientist Reliability & Operations Compliance, ISO New England, Inc.
Eric Winkler	Project Manager – FCM and Tariff Administration, ISO New England, Inc.
Cheryl Mendrala	Principal Engineer, ISO New England, Inc.
Jason Marshall	Technical Manager, Midwest ISO
Marie Knox	Standards Compliance Analyst II, Midwest ISO
Dean Hartung	Manager Real Time Market Operations, PJM Interconnection, LLC
Cathy Wesley	Sr. Analyst, PJM Interconnection, LLC
Carl Monroe	Sr. Vice President Operations & Chief Operating Officer, Southwest Power Pool
Greg Campoli	Supervisor – Reliability Compliance and Assessment, New York ISO
Diana Pommen	Director Interjurisdictional Affairs, Alberta Electric System Operator
Jimmy Womack	Manager-Tariff Administration, Southwest Power Pool
Shucheng Liu	Ph.D., Principal Market Developer, California ISO (CAISO)
Terry Bilke	Director Standards Compliance and Strategy, Midwest ISO



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### NORTH AMERICAN ENERGY STANDARDS BOARD 2009 EXECUTIVE COMMITTEE ALTERNATES – Retail Gas Quadrant

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#### DISTRIBUTORS SEGMENT

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Joe Stengel	Manager, Federal Regulatory Affairs, Philadelphia Gas Works
Mike McShane	Program Leader, Gas Choice Programs, Baltimore Gas and Electric Company

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#### END USERS/PUBLIC AGENCIES SEGMENT

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#### SERVICE PROVIDERS/SUPPLIERS SEGMENT

Paul Cherevka	Project Manager Data Warehouse, Dominion Retail
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October 19, 2009

**TO:** NAESB Quadrant Executive Committee Members, Alternates and Interested Industry Participants  
**FROM:** Rae McQuade, NAESB President  
**RE:** Quadrant Executive Committee Meeting Announcements and Draft Agendas with links to Meeting Materials

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### NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETINGS Hosted by Dominion in Glen Allen, VA

First, let me thank Dominion for its generosity and commitment to the NAESB organization through hosting this series of meetings. Without such support, it would be very difficult to maintain the NAESB budget and provide various locations around the country to NAESB in-person attendance meetings.

As we have announced at prior Executive Committee meetings, meeting announcements and in other communications, the Executive Committee (EC) will meet in Glen Allen, VA hosted by Dominion. Below are the meeting arrangements:

Where: Dominion Offices: 5000 Dominion Blvd, Glen Allen, VA 23060  
Contact: Veronica Thomason, 713-356-0060  
When: Tuesday, October 27 -- 10:00 a.m. to 4:00 p.m. Eastern – Wholesale Electric Quadrant  
Wednesday, October 28 -- 10:00 a.m. to 4:00 p.m. Eastern – Retail Gas Quadrant and Retail Electric Quadrant  
Thursday, October 29 -- 10:00 a.m. to 4:00 p.m. Eastern – Wholesale Gas Quadrant

If you plan to attend any of the above EC meetings and have not already RSVPed to our office through the other announcements, please do so at your earliest convenience to the NAESB office ([naesb@naesb.org](mailto:naesb@naesb.org)) so that proper meeting arrangements can be made by NAESB and our host. Travel information is posted on the NAESB web site on the EC pages and can be directly accessed from the following link: [http://www.naesb.org/weq/weq\\_ec.asp](http://www.naesb.org/weq/weq_ec.asp). If you plan to participate by conference call, the information to do so is provided in this document. The EC meetings will be web cast as well. The meeting, conference calling and web casting is open to any interested party.

The materials for the meeting will be emailed to the participants and posted on the web site shortly. In an effort to control costs and be more environmentally aware, we are not printing Executive Committee books any longer although they will be posted in an assembled pdf document for each quadrant meeting, in addition to the links to the native formatted documents provided in the agendas. For agenda items where materials are already available and have been sent to you in prior communications, or posted on the web site, the links to those documents are included in the agenda for your convenience, and to help you prepare for the meetings. The links are formatted in blue underlined text. As the meeting approaches, this agenda with additional links to documents will be provided, along with the pdf assembled books.

Please note that in discussions with the Retail Quadrants EC chairs and vice chairs, it has been determined that all Retail EC meetings for 2009 will be conference call/web casts in recognition of the small number of in-person attendance from the 2008 records, and also in recognition of the reduced travel budgets for 2009 of many of the Retail EC members. However, since NAESB staff will be on location to provide support for the retail EC meetings, any Retail EC participant may choose to join the staff and participate in-person.

As always, the chair reserves the right to extend the time of the meeting to ensure that agenda items are addressed. The times indicated on the agenda will be followed to ensure that agenda items are allotted appropriate time slots. Should an agenda item conclude earlier than its stated time slot, the remaining time could be allotted to other agenda items at the discretion of the chair.



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There are other NAESB subcommittee meetings being held in conjunction with the EC meetings. They are held in various locations, and available via conference call and web cast, and upon advance request<sup>1</sup> for WGQ Joint IR/Technical subcommittee meetings. The details are:

Date	Time	Meeting/Location
Mon, October 26	2 pm to 3 pm E	Retail Glossary Subcommittee/Dominion Innsbrook Offices Conference Call Number: 866-740-1260 Access Code: 3560061 Security Code: 3785 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
	3 pm to 5 pm E	Day 1 of Retail Business Practices Subcommittee/Dominion Innsbrook Offices Conference Call Number: 866-740-1260 Access Code: 3560061 Security Code: 3785 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
Tues, October 27	9:30 am to 4:00 pm E	Day 2 of Retail Business Practices Subcommittee/Dominion Innsbrook Offices Conference Call Number: 866-740-1260 Access Code: 3560061 Security Code: 3785 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
	10 am to 4 pm E	WEQ EC Meeting/Dominion Innsbrook Offices Conference Call Number: 866-740-1260 Access Code: 3560060 Security Code: 1022 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
	9 am to 4 pm E	Day 1 of WGQ Joint IR & Technical//Dominion Innsbrook Offices No conference calling requested
Wed, Oct 28	10 am to 4 pm E	Retail EC Meeting by phone/web cast/ for in person attendance, please join NAESB staff at Dominion Innsbrook Offices Conference Call Number: 866-740-1260 Access Code: : 3560060 Security Code: 8035 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)

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<sup>1</sup> To set up phone call in capability for the WGQ IR/Technical meetings requires request from attendees unable to participate in person.



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Date	Time	Meeting/Location
	9 am to 4 pm E	Day 2 of WGQ Joint IR & Technical//Dominion Innsbrook Offices  No conference calling requested
	9 am to 5 pm E	Day 1 of WEQ OASIS Subcommittee/ Dominion Innsbrook Offices  Conference Call Number: 866-740-1260 Access Code: : 3560062 Security Code: 4698 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
Thu, Oct 29	10 am to 4 pm E	WGQ EC Meeting Dominion Innsbrook Offices  Conference Call Number: 866-740-1260 Access Code: : 3560060 Security Code: 6425 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)
	9 am to 5 pm E	Day 2 of WEQ OASIS Subcommittee/ Dominion Innsbrook Offices  Conference Call Number: 866-740-1260 Access Code: : 3560062 Security Code: 4698 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes)

You can access the materials for this meeting from the NAESB web site, at the page specific for the subcommittee noted (WEQ: <http://www.naesb.org/weq/default.asp>, WGQ: <http://www.naesb.org/wgq/default.asp>, and Retail: <http://www.naesb.org/RGQ/default.asp> ).

Please feel free to call the NAESB office should you have any questions or comments.

Best Regards, *Rae*



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## NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETING WHOLESALE ELECTRIC QUADRANT DRAFT AGENDA

Tuesday, October 27, 2009 – 10:00 am to 4:00 pm E  
Dominion Innsbrook Offices, Glen Allen, VA

- 
- | # | Agenda Item |
|---|-------------|
|---|-------------|
- 
1. Welcome
    - Antitrust Guidelines [http://www.naesb.org/misc/antitrust\\_guidance.doc](http://www.naesb.org/misc/antitrust_guidance.doc)
    - Welcome to members and attendees
    - Quorum Establishment: Roll Call of WEQ EC Members and Alternates: [http://www.naesb.org/pdf4/ec\\_terms.pdf](http://www.naesb.org/pdf4/ec_terms.pdf) (EC) and [http://www.naesb.org/pdf4/alt\\_ec\\_members.pdf](http://www.naesb.org/pdf4/alt_ec_members.pdf) (EC Alt)
    - Adoption of WEQ Agenda (simple majority) <http://www.naesb.org/pdf4/ec102709a.doc>
  2. Wholesale Electric Quadrant Draft Minutes (simple majority to approve)
    - Adoption of the WEQ EC Meeting Minutes:
      - August 18, 2009: [http://www.naesb.org/pdf4/weq\\_ec081809dm.doc](http://www.naesb.org/pdf4/weq_ec081809dm.doc)
  3. Review and vote on 2009 WEQ Annual Plan Items 1(a); 3(a)(vii); R05020: 1.8.1 e-Tag Specifications and Schema (super-majority vote)
    - Recommendation REVISED 1.8.1 Specification- clean: [http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a2.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a2.doc)
    - Recommendation REVISED 1.8.1 Specification – redlined: [http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a1.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a1.doc)
    - Recommendation 1.8.1 Schema – .xds format: [http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a4.xds](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a4.xds)
    - Recommendation 1.8.1 Schema – word format: [http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a3.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a3.doc)
    - Formal Comment Period ended October 5, 2009:
      - D. Landers, New Brunswick System Operator: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409nbso.pdf](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409nbso.pdf)
      - S. Ashbaker, WECC - Comments: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409wecc\\_1.doc](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_1.doc)
      - S. Ashbaker, WECC - Redlines: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409wecc\\_2.doc](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409wecc_2.doc)
      - T. Kannel, MCG Energy: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409mcg\\_energy.doc](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409mcg_energy.doc)
      - J. Ray, OATI: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409oati.pdf](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409oati.pdf)
      - NAESB Standards Review Subcommittee: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409weq\\_srs.doc](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409weq_srs.doc)
      - D. Landers, New Brunswick System Operator: [http://naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409nbso.pdf](http://naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409nbso.pdf)
      - NAESB Joint Electric Scheduling Subcommittee (JESS): [http://www.naesb.org/pdf4/weq\\_ec102709w5.doc](http://www.naesb.org/pdf4/weq_ec102709w5.doc)
  4. 2009 WEQ Annual Plan Items 1(a) R05020 and 3(a)(vii) – Coordinate Interchange – (super-majority vote)
    - Recommendation: [http://www.naesb.org/pdf4/weq\\_2009\\_ap\\_1a\\_r05020\\_2009\\_3avii\\_rec.doc](http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec.doc)
    - Attachment Clean: [http://www.naesb.org/pdf4/weq\\_2009\\_ap\\_1a\\_r05020\\_2009\\_3avii\\_rec\\_attach2.doc](http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach2.doc)
    - Attachment Redlined: [http://www.naesb.org/pdf4/weq\\_2009\\_ap\\_1a\\_r05020\\_2009\\_3avii\\_rec\\_attach1.doc](http://www.naesb.org/pdf4/weq_2009_ap_1a_r05020_2009_3avii_rec_attach1.doc)
    - Comments due October 8, 2009:
      - E Skiba, Midwest ISO [http://naesb.org/pdf4/weq\\_090909weq\\_srs.doc](http://naesb.org/pdf4/weq_090909weq_srs.doc).
      - E Davis, Entergy: [http://naesb.org/pdf4/weq\\_090909entergy.doc](http://naesb.org/pdf4/weq_090909entergy.doc)
      - J Ray, OATI: [http://naesb.org/pdf4/weq\\_090909oati.pdf](http://naesb.org/pdf4/weq_090909oati.pdf)
      - C Wesley, PJM: : [http://naesb.org/pdf4/weq\\_090909pjm.doc](http://naesb.org/pdf4/weq_090909pjm.doc)
      - NAESB Joint Electric Scheduling Subcommittee (JESS): [http://www.naesb.org/pdf4/weq\\_ec102709w4.doc](http://www.naesb.org/pdf4/weq_ec102709w4.doc)



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## NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETING WHOLESALE ELECTRIC QUADRANT DRAFT AGENDA

Tuesday, October 27, 2009 – 10:00 am to 4:00 pm E  
Dominion Innsbrook Offices, Glen Allen, VA

- 
- | # | Agenda Item |
|---|-------------|
|---|-------------|
- 
5. Discuss and vote (simple majority) in minor corrections:
    - Minor Correction submitted by J.T. Wood October 15, 2009: [http://www.naesb.org/pdf4/weq\\_ec102709w2.doc](http://www.naesb.org/pdf4/weq_ec102709w2.doc)
  6. Subcommittee Updates (meeting materials for updates will be provided by leadership as they are available):
    - Triage Subcommittee: <http://www.naesb.org/pdf4/tr101509agenda.doc>
    - Business Practices Subcommittee (BPS): [http://www.naesb.org/pdf4/weq\\_ec102709w3.ppt](http://www.naesb.org/pdf4/weq_ec102709w3.ppt)
      - TLR
      - Time Inadvertent Management Task Force
    - DSM-EE Subcommittee – Discussion on WEQ Phase 2 effort and scope with possible simple majority vote, Materials provided from E. Winkler: [http://www.naesb.org/misc/pages\\_transcript\\_weq\\_ec\\_020309.pdf](http://www.naesb.org/misc/pages_transcript_weq_ec_020309.pdf)
    - OASIS Subcommittee
    - Joint Electric Scheduling Subcommittee (JESS)
    - Standards Review Subcommittee (SRS): [http://www.naesb.org/pdf4/weq\\_ec102709w1.ppt](http://www.naesb.org/pdf4/weq_ec102709w1.ppt)
    - Glossary Efforts
  7. Review, discuss, identify changes and vote to approve changes to the 2009 Annual Plan to be proposed to the Board of Directors: [http://www.naesb.org/pdf4/draft\\_weq\\_2009\\_annual\\_plan.doc](http://www.naesb.org/pdf4/draft_weq_2009_annual_plan.doc) (simple majority vote for EC endorsement of proposed changes to be forwarded for Board approval)
  8. Discuss 2010 Annual Plan effort: [http://www.naesb.org/pdf4/2010aplan\\_110609\\_110909a.doc](http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc)
  9. Miscellaneous Process Issues for discussion:
    - Overlapping WEQ Subcommittee meetings
    - Timing on Informal Comments
  10. Board of Directors, Board Committee and Regulatory Updates (no votes or action to be taken):
    - Board Updates – Board Meeting September 24, 2009:
    - Wholesale Gas and Retail key activities – WGQ Annual Plan, Retail Annual Plan - [http://www.naesb.org/pdf4/draft\\_wgq\\_2009\\_annual\\_plan.doc](http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc) (WGQ), [http://www.naesb.org/pdf4/draft\\_retail\\_2009\\_annual\\_plan.doc](http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc) (Retail)
    - Update on Board Retail Structure Review Committee efforts
    - Update on WEQ Board Deliberations on Segment Structure
    - Regulatory Efforts:
      - October 9, 2009 - NAESB Report to the FERC regarding errata to WEQ Standards, Versions 001, 002.0 and 002.1 (Docket No. RM05-5 et al): [http://www.naesb.org/pdf4/ferc100909\\_weq\\_errata\\_filing.pdf](http://www.naesb.org/pdf4/ferc100909_weq_errata_filing.pdf)
      - FCC Comments, October 2, 2009: [http://www.naesb.org/pdf4/fcc100209\\_naesb\\_filing.pdf](http://www.naesb.org/pdf4/fcc100209_naesb_filing.pdf)
  11. Other Business
    - 2010 Schedule: [http://www.naesb.org/misc/2010\\_schedule.pdf](http://www.naesb.org/misc/2010_schedule.pdf)
    - Election of Officers for 2010
  12. Adjourn

*Attire – Business Casual*



# North American Energy Standards Board

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Phone: (713) 356-0060, Fax: (713) 356-0067, E-mail: [naesb@naesb.org](mailto:naesb@naesb.org)  
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## NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETING RETAIL QUADRANTS DRAFT AGENDA

Wednesday, October 28, 2009 – 10:00 am to 4:00 pm E

Web Cast and Conference Call, for in person attendance – Dominion Innsbrook Offices

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- | #  | Agenda Item  |
|----|--|
| 1. | Welcome <ul style="list-style-type: none"><li>• Antitrust Guidelines <a href="http://www.naesb.org/misc/antitrust_guidance.doc">http://www.naesb.org/misc/antitrust_guidance.doc</a> (Guidance)</li><li>• Welcome to members and attendees</li><li>• Quorum Establishment: Roll Call of Retail EC Members and Alternates: <a href="http://www.naesb.org/pdf4/ec_terms.pdf">http://www.naesb.org/pdf4/ec_terms.pdf</a> (EC) and <a href="http://www.naesb.org/pdf4/alt_ec_members.pdf">http://www.naesb.org/pdf4/alt_ec_members.pdf</a> (EC Alt)</li><li>• Adoption of Retail Agenda (simple majority) <a href="http://www.naesb.org/pdf4/ec102709a.doc">http://www.naesb.org/pdf4/ec102709a.doc</a></li></ul>  |
| 2. | Retail Quadrants Draft Minutes (simple majority to approve) <ul style="list-style-type: none"><li>• Adoption of the Retail EC Meeting Minutes:<ul style="list-style-type: none"><li>• October 2, 2009:</li><li>• May 13, 2009: <a href="http://www.naesb.org/pdf4/retail_ec051309dm.doc">http://www.naesb.org/pdf4/retail_ec051309dm.doc</a></li></ul></li></ul>   |
| 3. | Discussion for Next Retail Publication Schedule  |
| 4. | Subcommittee Updates (meeting materials for updates will be provided by leadership as they are available): <ul style="list-style-type: none"><li>• Triage Subcommittee: <a href="http://www.naesb.org/pdf4/tr101509agenda.doc">http://www.naesb.org/pdf4/tr101509agenda.doc</a></li><li>• Business Practices Subcommittee (BPS)</li><li>• DSM-EE Subcommittee</li><li>• Information Requirements Subcommittee (IR)</li><li>• Technical Electronic Implementation Subcommittee (TEIS)</li><li>• Texas Task Force</li><li>• Glossary Efforts</li></ul>   |
| 5. | Review, discuss, identify changes and vote to approve changes to the 2009 Annual Plan to be proposed to the Board of Directors: <a href="http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc</a> (simple majority vote for EC endorsement of proposed changes to be forwarded for Board approval)   |
| 6. | Discuss 2010 Annual Plan effort: <a href="http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc">http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc</a>   |
| 7. | Board of Directors, Board Committee and Regulatory Updates (no votes or action to be taken): <ul style="list-style-type: none"><li>• Board Updates - Board Meeting September 24, 2009:</li><li>• Wholesale Gas and Wholesale Electric key activities – WGQ Annual Plan, WEQ Annual Plan - <a href="http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc</a> (WGQ), <a href="http://www.naesb.org/pdf4/draft_weg_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_weg_2009_annual_plan.doc</a> (WEQ)</li><li>• Update on Board Retail Structure Review Committee efforts</li><li>• Regulatory Efforts:<ul style="list-style-type: none"><li>• October 2, 2009 - NAESB Filing to the FCC - Comments – NBP Public Notice #2, GN Docket Nos. 09-47, 09-51 and 09-137 <a href="http://www.naesb.org/pdf4/fcc100209_naesb_filing.pdf">http://www.naesb.org/pdf4/fcc100209_naesb_filing.pdf</a></li><li>• September 30, 2009 - NAESB Report to FERC on WGQ Version 1.9 Standards (Docket No. RM96-1 et al) : <a href="http://www.naesb.org/pdf4/ferc093009_naesb_wgq_1.9_filing.pdf">http://www.naesb.org/pdf4/ferc093009_naesb_wgq_1.9_filing.pdf</a></li></ul></li></ul> |
| 8. | Other Business <ul style="list-style-type: none"><li>• 2010 Schedule</li><li>• Election of Officers for 2010</li></ul>   |
| 9. | Adjourn  |

*Attire – Business Casual*



## North American Energy Standards Board

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**NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETING  
WHOLESALE GAS QUADRANT DRAFT AGENDA  
Thursday, October 29, 2009 – 10:00 am to 4:00 pm E  
Dominion Innsbrook Offices, Glen Allen, VA**

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- | #  | Agenda Item  |
|----|--|
| 1. | Welcome <ul style="list-style-type: none"><li>• Antitrust Guidelines <a href="http://www.naesb.org/misc/antitrust_guidance.doc">http://www.naesb.org/misc/antitrust_guidance.doc</a> (Guidance)</li><li>• Welcome to members and attendees</li><li>• Quorum Establishment: Roll Call of WGQ EC Members and Alternates: <a href="http://www.naesb.org/pdf4/ec_terms.pdf">http://www.naesb.org/pdf4/ec_terms.pdf</a> (EC) and <a href="http://www.naesb.org/pdf4/alt_ec_members.pdf">http://www.naesb.org/pdf4/alt_ec_members.pdf</a> (EC Alt)</li><li>• Adoption of WGQ Agenda (simple majority) <a href="http://www.naesb.org/pdf4/ec102709a.doc">http://www.naesb.org/pdf4/ec102709a.doc</a></li></ul>  |
| 2. | WGQ Quadrants Draft Minutes (simple majority to approve) <ul style="list-style-type: none"><li>• Adoption of the WGQ EC Meeting Minutes:<br/>June 30, 2009: <a href="http://www.naesb.org/pdf4/wgq_ec063009dm.doc">http://www.naesb.org/pdf4/wgq_ec063009dm.doc</a></li></ul>  |
| 3. | Review and vote on Recommendation R07009, 2008 WGQ Annual Plan Item 3, 2009 WGQ Annual Plan Item 2.a - "Update ISDA Gas Annex to correspond to the updated NAESB Base Contract for Sale and Purchase of Sale of Natural Gas, dated September 5, 2006" (NAESB WGQ Std. 1.4.4) (super-majority vote) <ul style="list-style-type: none"><li>• Recommendation: <a href="http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec.doc">http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec.doc</a></li><li>• Exhibit A (redline): <a href="http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec_attach2.doc">http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec_attach2.doc</a></li><li>• Exhibit A (clean): <a href="http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec_attach2.doc">http://www.naesb.org/pdf4/r07009_2008_wgq_ap3_2009_wgq_ap2a_rec_attach2.doc</a></li><li>• Comments due 10-26-09, (as comments are received, they will be posted and an updated agenda with links will be issued as the meeting date approaches):<ul style="list-style-type: none"><li>• D. Gussow, FPL: <a href="http://naesb.org/pdf4/wgq_092409fpl.doc">http://naesb.org/pdf4/wgq_092409fpl.doc</a></li></ul></li></ul> |
| 4. | Review and vote on minor correction to the " (super-majority vote) <ul style="list-style-type: none"><li>• Minor Correction: <a href="http://naesb.org/pdf4/wgq_mc09032.doc">http://naesb.org/pdf4/wgq_mc09032.doc</a> , Attachment: <a href="http://naesb.org/pdf4/wgq_mc09032_attach.doc">http://naesb.org/pdf4/wgq_mc09032_attach.doc</a></li></ul>   |
| 5. | Discussions as outgrowths of the WGQ Leadership Meeting held on September 23, 2009: <ul style="list-style-type: none"><li>• Publishing Schedule (annually or biannually)</li><li>• Reporting segment blocks to the FERC as they occur or with the normal flow of filing standards</li><li>• Considering business practices standards development contemporaneously with technical and information requirements standards development</li><li>• Considering a direction to XML usage and standards development</li><li>• Smart Grid efforts and gas-electric coordination</li></ul>   |
| 6. | Subcommittee Updates (meeting materials for updates will be provided by leadership as they are available): <ul style="list-style-type: none"><li>• Triage Subcommittee: <a href="http://www.naesb.org/pdf4/tr101509agenda.doc">http://www.naesb.org/pdf4/tr101509agenda.doc</a></li><li>• Business Practices Subcommittee (BPS)</li><li>• Electronic Delivery Mechanisms Subcommittee (EDM)</li><li>• Information Requirements Subcommittee (IR)/Technical Subcommittee</li><li>• Interpretations Subcommittee</li><li>• Contracts Subcommittee</li></ul>  |



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**NORTH AMERICAN ENERGY STANDARDS BOARD EXECUTIVE COMMITTEE MEETING  
WHOLESALE GAS QUADRANT DRAFT AGENDA  
Thursday, October 29, 2009 – 10:00 am to 4:00 pm E  
Dominion Innsbrook Offices, Glen Allen, VA**

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- | #   | Agenda Item  |
|-----|--|
| 7.  | Review, discuss, identify changes and vote to approve changes to the 2009 Annual Plan to be proposed to the Board of Directors: <a href="http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc</a> (simple majority vote for EC endorsement of proposed changes to be forwarded for Board approval)   |
| 8.  | Discuss 2010 Annual Plan effort: <a href="http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc">http://www.naesb.org/pdf4/2010aplan_110609_110909a.doc</a>   |
| 9.  | Board of Directors, Board Committee and Regulatory Updates (no votes or action to be taken): <ul style="list-style-type: none"><li>• Board Updates: Board Meeting September 24, 2009:</li><li>• Retail and Wholesale Electric key activities – Retail Annual Plan, WEQ Annual Plan - <a href="http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_retail_2009_annual_plan.doc</a> (Retail), <a href="http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc">http://www.naesb.org/pdf4/draft_wgq_2009_annual_plan.doc</a> (WEQ)</li><li>• Update on Board Retail Structure Review Committee efforts</li><li>• FERC Efforts:<ul style="list-style-type: none"><li>• Version 1.9 Filing: <a href="http://www.naesb.org/pdf4/ferc093009_naesb_wgq_1.9_filing.pdf">http://www.naesb.org/pdf4/ferc093009_naesb_wgq_1.9_filing.pdf</a></li><li>• Related Minor Correction Filing: <a href="http://www.naesb.org/pdf4/ferc102009_wgq_errata_filing.pdf">http://www.naesb.org/pdf4/ferc102009_wgq_errata_filing.pdf</a></li></ul></li></ul> |
| 10. | Other Business: <ul style="list-style-type: none"><li>• 2010 Schedule</li><li>• Election of Officers for 2010</li></ul>  |
| 11. | Adjourn  |

*Attire – Business Casual*



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August 18, 2009

**TO:** NAESB Wholesale Electric Quadrant Executive Committee and Interested Industry Participants  
**FROM:** Jonathan Booe, NAESB Staff Attorney  
**RE:** Wholesale Electric Quadrant Executive Committee Meeting Draft Minutes

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**NORTH AMERICAN ENERGY STANDARDS BOARD  
WHOLESALE ELECTRIC QUADRANT  
EXECUTIVE COMMITTEE MEETING  
Hosted by El Paso Natural Gas – Colorado Springs, Colorado  
Tuesday, August 18, 2009 – 10:00 am to 4:00 pm Mountain  
DRAFT MINUTES**

### 1. Welcome

Ms. York called the meeting to order and welcomed the Wholesale Electric Quadrant (“WEQ”) Executive Committee (“EC”) members, alternates and other participants. Mr. Booe gave the antitrust guidance and called the roll of the WEQ EC members and alternates. Quorum was established. The other participants, both in attendance and on the phone, introduced themselves.

### 2. Adoption of Draft Agenda and Minutes

Draft Agenda: Mr. Skiba moved to adopt the agenda as drafted and Ms. Otondo seconded the motion. The motion passed without opposition.

May 12, 2009 Meeting Minutes: The participants reviewed the draft minutes from the [May 12, 2009](#) WEQ EC meeting. Ms. Otondo moved to adopt the draft minutes and Mr. Skiba seconded the motion. Ms. Otondo and Mr. Skiba offered minor corrections to the draft meeting minutes. Ms. Otondo and Mr. Skiba accepted the corrections as friendly amendments to their motion to adopt the draft minutes. The motion passed without opposition. The final minutes can be found on the NAESB website through the following hyperlink:

[http://www.naesb.org/pdf4/weq\\_ec051209fm.doc](http://www.naesb.org/pdf4/weq_ec051209fm.doc)

June 8, 2009 Meeting Minutes: The participants reviewed the draft minutes from the [June 8, 2009](#) WEQ EC conference call. Ms. Otondo moved to adopt the draft minutes and Mr. Skiba seconded the motion. Ms. Otondo and Mr. Skiba offered minor corrections to the draft meeting minutes. Mr. Skiba noted an inconsistency in the voting table. Ms. Cunningham stated that she would check her notes from the meeting and make the correction. Ms. Otondo and Mr. Skiba accepted the corrections as friendly amendments to their motion to adopt the draft minutes. The motion passed without opposition. The final minutes can be found on the NAESB website through the following link: [http://www.naesb.org/pdf4/weq\\_ec060809fm.doc](http://www.naesb.org/pdf4/weq_ec060809fm.doc)

### 3. Subcommittee Updates

Triage Subcommittee: Ms McQuade provided an update of the activities of the Triage Subcommittee. She noted that only one item, R09011, has been assigned to the WEQ Business Practice Subcommittee (“BPS”) jointly with the Wholesale Gas Quadrant (“WGQ”) BPS and that no adverse comments regarding the dispositions were submitted.

Business Practices Subcommittee: Mr. Skiba gave a [PowerPoint presentation](#) concerning the activities of the WEQ BPS. During the last WEQ BPS meeting the subcommittee approved the minor correction to address 2009 WEQ Annual Plan Item 2.b.ii related to the results of the NERC market flow threshold field test that will be addressed as agenda item four. The WEQ BPS has also started the scoping of 2009 WEQ Annual Plan Item 1.b.i concerning parallel flow visualization/mitigation for Reliability Coordinators. Mr. Skiba stated that there will need to be some level of coordination with NERC on the item as it involves the enhancement of NERC tools. Ms. McQuade stated



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that she would discuss the item with Mr. Rodriquez. The WEQ BPS has also scheduled joint meetings with the WGQ BPS to coordinate modifications to WEQ-011 Gas/Electric Communication standards and clarification concerning the term Power Plant Operator. Mr. Skiba noted that completion date of some of the items assigned to the WGQ BPS will have to be pushed back.

- **Transmission Load Relief:** Mr. Skiba stated that the WEQ BPS has held two joint conference calls with the NERC TLR Drafting Team and that during their meeting next week the groups will begin to review the comments submitted to NERC on IRC-006. He stated the NERC TLR Drafting Team will also meet to approve the final report on the market flow threshold field test after it has been reviewed by the NERC Operating Committee.
- **Time Inadvertent Management Task Force:** Mr. Bilke gave a [PowerPoint presentation](#) concerning the activities of the Time Inadvertent Management Task Force (“TIMTF”). The TIMTF has been meeting with the NERC Balance Authority Controls Drafting Team as they address FERC Order No. 693 to determine if there are any commercial aspects that need to be addressed by NAESB. Mr. Bilke stated that groups met with FERC staff to discuss some of the issues they have encountered and that the FERC was open to some of the alternatives presented. Mr. Goldberg asked if the NERC drafting team is still discussing eliminating time error corrections. Mr. Bilke responded that NERC team has backed away from eliminating time error corrections altogether but is considering other alternatives. Mr. Goldberg asked how far along the NERC team is in modifying standards and if the modifications relate to frequency response or frequency excursions. Mr. Bilke responded that the NERC team has not posted anything for comment to date and that frequency response is not necessarily related to the time error correction work. Mr. Harshbarger noted that there is a field test being conducted in the WECC concerning frequency issues and asked if NERC is conducting a field test for time error corrections. Mr. Bilke stated that currently there is not a field test for time error corrections. Mr. Skiba noted that according to the NERC plans for 2010-2012 the completion date for these projects is slated for October 2012. Ms. McQuade stated that the subcommittee chairs should discuss these dates with the appropriate committees at NERC.

**DSM-EE Subcommittee:** Mr. Winkler gave a [PowerPoint presentation](#) concerning the activities of the DSM-EE Subcommittee. The DSM-EE Scoping task force has held two conference calls since the last WEQ EC meeting to determine the scope of work for 2009 WEQ Annual Plan Items 4(f), 4(g) and 4(h). During these meetings it was determined that subcommittees should be formed to develop measurement and verification standards for energy efficiency programs. Mr. Winkler noted that the scoping task force determined that the items 4(f) and 4(g) should be merged and the group developed suggested revisions to the language of the for the item. He also noted that the task force determined that item 4(h) should be made provisional pending congressional action on the cap and trade program. The next meeting is scheduled for September 30, 2009 in Austin, Texas and the topic of discussion will be the formation of the subcommittee that will address items 4(f) and 4(g).

Mr. Skiba asked Mr. Winkler if the subcommittee still intends create a new subcommittee to address energy efficiency. Mr. Winkler confirmed. Mr. Berwager stated the language for item 4(g) is very broad and asked if the item was within the scope of NAESB business practices adopted by the FERC. Ms. McQuade stated that the item spans both wholesale and retail markets and that the standards developed for the retail market are not enforceable unless a state adopts the standards and are not enforceable at the federal level unless FERC deems it such. Mr. Gallagher also noted that municipalities and co-operatives are not subject to federal jurisdiction under the FPA. Mr. Winkler noted that the retail measurement and verification standards for demand response are out for a formal comment period ending August 28, 2009.

**OASIS Subcommittees:** Mr. Wood provided an update of the OASIS Subcommittee activities. The subcommittee is addressing the network service (NITS) items resulting from FERC Order No. 890, as it is a large project. The group is almost complete with the concepts portion of the task and will soon begin drafting a recommendation based upon the agreed upon concepts. The subcommittee is on schedule to complete the NITS items by the end of the year. Ms. Otondo stated that the items categorized in the Order 890 Work Plan as group five are related to the NITS items and that it would be beneficial to address the group five items prior to the items categorized as group four. She



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stated that the co-chairs of the OASIS subcommittee would appreciate the support of the EC when making that recommendation.

**Joint Electric Scheduling Subcommittee (“JESS”):** Mr. Harshbarger provided an update of the JESS activities. The JESS has met twice since the last WEQ EC meeting and during those meetings focused efforts on the e-Tag 1.8.1 Specification and transition plan as well as updating WEQ-004 to complement the modifications made to the e-Tag Specification. The group also posted the NAESB Non-Disclosure Agreement for an informal comment period and will review the comments at their next meeting on September 1-2, 2009 at the NAESB office in Houston, Texas. Mr. Harshbarger stated that the JESS is going to need vendors to volunteer to participate in the testing of the e-Tag 1.8.1 Specification as part of the transition plan and that in the past there has been more participation by individuals with significant IT experience and knowledge. Ms. McQuade noted that, if needed, NAESB could make an announcement to the EC and Board Members and trade press requesting volunteers. Mr. Harshbarger stated that the JESS could make the same request through the NERC email exploder. He also noted that the JESS has removed discussions concerning the transfer of the Electric Industry Registry (“EIR”) to NAESB until the RFP is distributed by the NAESB staff. Ms. McQuade stated that the RFP has been drafted and edited but must be reviewed by the Managing Committee before it can be distributed. Mr. Harshbarger stated that he has been notified that Jim Hansen will be able to return to the JESS in October. Ms. McQuade asked if she should discuss finding a temporary replacement until Mr. Hansen can return and assume NERC leadership for the group. Mr. Harshbarger stated that he will contact Ms. McQuade after discussions with Mr. Hansen and NERC.

**Standards Review Subcommittee (SRS):** Mr. Saini provided an update and gave a [PowerPoint](#) presentation concerning the activities of the SRS. The SRS has met twice since the last WEQ EC meeting and during those meetings reviewed the NERC Reliability Standards Development Plan for 2009-2011 and provided feedback concerning the activities that may require some level of coordination with NAESB. Mr. Saini noted that the group is currently discussing whether it would more appropriate for the NAESB WEQ-011 standards to be maintained by NERC and coordinated with the NAESB WGQ-011 standards. He stated that Andy Rodriguez is discussing this with Dave Taylor and that they will contact Ms. McQuade very soon to discuss the issue. Ms. McQuade stated that reserving WEQ-011 would require approval by a super-majority of the WEQ EC and then ratification by the membership before being filed with the FERC. Mr. Desselle asked if the SRS participates in the NERC Standards Committee (“SC”) meetings and asked if the SRS reviews all NERC Standards Requests (“SARs”). Mr. Skiba responded that the SRS reviews NERC SARs at a high level and noted that the SRS does not normally participate in the NERC SC meetings. Ms. McQuade stated that the NAESB staff participates in the NERC SC conference calls. Mr. Desselle asked if there was strong participation in the SRS meetings and conference calls. Mr. Skiba responded that there is usually strong participation by ISOs and RTOs but not other segments. Ms. York stated that if the participation in the SRS does not improve that the WEQ EC should consider assigning members to participate as discussed at previous meetings. Mr. Goldberg asked if the NERC standards drafting teams maintain a checklist that includes reviewing work for commercial impacts. Mr. Skiba stated that NERC does not conduct that type of review but the SRS reviews all of the work products and requirements produced by the drafting teams and that NAESB has a very effective working relationship with the NERC staff. Ms. McQuade and Mr. Desselle supported Mr. Skiba’s statement and noted that both NERC and NAESB staff monitor each other’s work closely to ensure that joint development efforts are identified. Mr. Saini stated that this coordination has worked very well in the past. Mr. Skiba noted that the next SRS meeting is scheduled for September 15, 2009 and encouraged WEQ EC membership participation.

**Glossary Efforts:** Mr. Skiba provided an update of the WEQ glossary effort. The WEQ subcommittee chairs have been working to coordinate the definitions and acronyms contained in the NAESB WEQ standards for consistency and are currently working on a draft recommendation. Once the recommendation is complete, it will be posted for a 30 day informal comment period. Ms. Otondo noted that the draft recommendation does not include any modifications to the standards. She stated that once the standards and acronyms have been vetted, the chairs will address the necessary modifications to the standards. Mr. Pritchard asked if the modifications should be coordinated with the other Quadrants. Mr. Skiba stated that it would be up to the other Quadrants to do a similar review.



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#### **4. Review, discuss and Identify other changes and vote to approve the minor correction for Market Flow threshold**

Next, the participants reviewed the [minor correction](#) proposed by the BPS. Mr. Yeung made a motion to adopt the proposed minor correction. Mr. Gallagher seconded the motion. Mr. Skiba stated that the minor correction proposes to delete WEQ-008 Appendix D to support the recommendation of the NERC TLR Drafting Team that the market flow threshold for curtailments be changed from zero to five percent in response to FERC Order No. 673-D. He stated that the NERC Operating Reliability Subcommittee (“ORS”) will review and approve the results of the field test at an upcoming meeting and that NAESB is taking this action so that modification will be synchronized between both organizations. Mr. Davis asked for the steps to be taken at NERC for the action to be finalized. Mr. Skiba responded that once the NERC ORS approves the test, it is finalized. Ms. McQuade noted that this course of action has been discussed with FERC staff and they are aware of the steps being taken by both NERC and NAESB. Mr. Skiba stated that the ISOs participating in the field test are going to file a compliance waiver with the FERC until the modification is adopted and mandated with FERC. Mr. McGovern asked for clarification that the NAESB standard already contains a five percent market flow threshold for curtailment but that Appendix D contains the regional differences for the standard that will be removed as result of the field test. Mr. Skiba confirmed. The motion passed a simple majority vote without opposition.

#### **5. Review, discuss, identify changes and vote to approve changes to the 2009 Annual Plan to be proposed to the Board of Directors:**

The participants reviewed the proposed modifications to the [2009 WEQ Annual Plan](#). Mr. Goldberg made a motion to adopt the proposed changes to the 2009 WEQ Annual Plan including the modifications proposed to the DSM-EE activities. Mr. True seconded the motion. Mr. Skiba stated that he has a few additional modifications and asked if the OASIS subcommittee would like to discuss pushing back some of their completion dates. Ms. Otondo stated that she would like to add a sub-item to 2.a.iii and to make a note that the OASIS subcommittee should address item 2.a.iii prior to item 2.a.ii. Mr. Wood stated that he would discuss pushing back some of the completion dates for some of the items assigned to the OASIS subcommittee with the co-chairs and would forward their suggested changes to the NAESB office. Mr. Skiba stated that item 5.f should be closed and suggested moving the completion dates of items 3.a.ii.2 and 3.b.i. out an additional quarter. Ms. McQuade stated that a meeting of the Board Certification Committee could be called by the fourth quarter 2009 to address the issue. Mr. Goldberg and Mr. True modified the original motion to adopt 2009 WEQ Annual Plan to be proposed to the Board of Directors as revised during the meeting and with date corrections to be submitted after the meeting by the WEQ OASIS chairs. The motion passed a simple majority vote without opposition. A redline version of the 2009 WEQ Annual Plan as adopted by the EC can be found on the NAESB website through the following hyperlink: [http://www.naesb.org/pdf4/weq\\_ec081809a1.doc](http://www.naesb.org/pdf4/weq_ec081809a1.doc).

#### **6. Board of Directors, Board Committee and Regulatory Updates**

**Board Updates, Wholesale Gas and Retail Key Activities and Retail Restructuring:** Ms. McQuade provide a review of the actions taken by the Board of Directors at the [June 25, 2009 Board Meeting](#). NAESB experienced a loss in membership over the last quarter and is expecting a loss in membership through September. According to exit interviews, the increase in membership fees has not been cited as a reason for companies not renewing their membership. The Retail Quadrants are in the process of restructuring their segment structure so that the structure more accurately reflects the market with the focus on DSM-EE rather than customer choice programs. The meeting to vote on proposed modifications to the Retail Quadrants Procedures to implement the restructuring is scheduled for August 25, 2009. The Retail Quadrants published Version 1.1 of the Retail Standards on June 30, 2009 and the Wholesale Gas Quadrant is on schedule to publish Version 1.9 of their standards on September 30, 2009. While the WEQ is currently slated to publish Version 2.2 of the WEQ standards first quarter 2009, the publication date may slide to second quarter 2009 depending on the progress made in completion of the Order890 issues. The September Board meeting will be the annual meeting of the members, as well as, the strategic planning meeting for next year’s annual plans. Several items on the 2009 WEQ Annual Plan will rollover to 2010, however, the 2009 WGQ Annual Plan is nearly complete giving the WGQ an opportunity to address some new projects. The 2010 Retail Annual Plan will continue to focus on the DSM-EE activities.



## North American Energy Standards Board

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FERC Efforts: Smart Grid: Ms. McQuade, Mr. Desselle and Mr. Booe provided an update of the NAESB Smart Grid activities. The Smart Grid initiative is being coordinated by the National Institute of Standards and Technology (“NIST”) through the Department of Commerce. NAESB has participated in all of the NIST and EPRI hosted Smart Grid meetings to determine if the actions taken will have an impact on existing NAESB standards. During the August 3-4, 2009 NIST Smart Grid meeting NAESB was given several assignments in three areas – the development of demand response signals, the development of a common specification for price and schedule and the development of an internet protocol suite. A [letter to members](#) concerning these activities and requesting participation was distributed on August 12, 2009. The letter includes a description of the assignments contained in the priority action plans resulting from the August 3-4, 2009 meeting, a description of the 16 initial standards proposed by NIST and the two sets of comments filed with NIST in response to the 16 standards and the draft interim standards roadmap. A Smart Grid Strategic Steering Committee and a Smart Grid Standards Task Force are in the process of being created to address the work resulting from the August 3-4, 2009 meeting and to guide the Organization as it responds to the initiative.

Ms. McQuade and Mr. Desselle noted the lack of involvement by energy industry participants in the Smart Grid standards development process and strongly encouraged the EC Members to bring the issue to the attention their companies. Mr. Goldberg asked if the Energy Independence and Security Act of 2007 extended jurisdiction so that regulatory authorities could enforce the developed standards. Mr. Gallagher stated that his legal counsel has not cited any additional authority. Mr. Davis stated that he questions how much the Smart Grid initiative will actually affect Entergy or NAESB. Ms. McQuade noted that the OpenADR standard included in the list of 16 initial standards proposed by NIST places several requirements on utilities and encouraged the participants to review the proposed standards. Mr. Desselle and Ms. McQuade noted that they have raised the issue of the lack of energy industry participation to the FERC, NIST, EEI and many others in an effort to increase involvement but have yet to see many results. Ms. McQuade asked those interested in participating to contact the NAESB staff.

### **7. Other Business**

Mr. Green proposed a motion requesting that the NAESB and NERC leadership coordinate concerning the work of the NERC IDC working group. Mr. Skiba seconded the motion. The participants discussed the motion and further defined its scope. Mr. Green modified his motion as follows:

The Executive Committee (EC) recommends that the joint development process be invoked. Given the interdependency of the NERC TLR procedures and NAESB WEQ-008, the EC recommends the NAESB BPS to review and coordinate the work currently being carried out by the NERC ORS and its working groups to develop specifications for an enhanced IDC.

Mr. Skiba accepted the modifications. The motion passed a simple majority vote without opposition.

### **8. Adjourn**

Mr. Gallagher moved to adjourn the meeting and Mr. True seconded the motion. The meeting adjourned at 2:42 p.m. Mountain.



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## 9. Attendance

August 18, 2009 – WEQ EC Attendance		
TRANSMISSION SEGMENT	SUBSEGMENT:	ATTENDANCE
Patrick McGovern	Georgia Transmission Corporation	In Person
Wendy Weathers	Salt River Project	Phone
Daryl McGee	Southern Company Services	In Person
Marcie Otondo alt. for Mark Hackney	Arizona Public Service	In Person
Edward Davis	Entergy Services, Inc.	In Person
Bob Harshbarger	Puget Sound Energy	In Person
Michelle Mizumori	WECC	In Person
GENERATION SEGMENT		
William J. Gallagher	Vermont Public Power Supply Authority	In Person
Kathy York	Tennessee Valley Authority	In Person
Jalal Babik	Dominion Resource Services, Inc.	Phone
John Ciza	Southern Company Services	Phone
VACANCY		
Trent Carlson	Reliant Energy, Inc.	
Neal Balu	Wisconsin Public Service Corporation	
MARKETERS/BROKERS SEGMENT		
Mack Thompson	American Municipal Power	
Belinda Thornton	Tennessee Valley Authority	
VACANCY		
Richard Lehman	Salt River Project	
John Apperson	PacifiCorp Energy	Phone
Roy True	ACES Power	In Person
Barry Green	Electric Power Supply Association (EPSA)	In Person

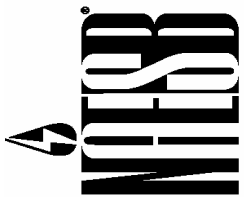


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## August 18, 2009 – WEQ EC Attendance

DISTRIBUTION/LOAD SERVING ENTITIES (LSE) SEGMENT	SUBSEGMENT:	ATTENDANCE
Ray Phillips	Muni/Coop	Phone
VACANCY	Muni/Coop	
Alan Pritchard	IOU	Phone
Jeffrey C. Mueller	IOU	
Robert Martinko	at large	Phone
Syd Berwager	Other	In Person
Andy Rodriguez	At-Large	
END USERS SEGMENT		
VACANCY	At-Large	
Aaron Breidenbaugh	At-Large	Phone
Lou Ann Westerfield	Regulator	
VACANCY	At-Large	
VACANCY	At-Large	
VACANCY	At-Large	
Paul Sorenson	At-Large	
INDEPENDENT GRID OPERATORS/PLANNERS SEGMENT		
Thomas Bowe	PJM Interconnection	Phone
Jim Castle	New York Independent System Operator, Inc.	Phone
Matt Goldberg	ISO New England, Inc.	In Person
Anjali Sheffrin	California ISO	Phone
Paul Wattles alt. for Joel Mickey	Electric Reliability Council of Texas	Phone
Ed Skiba	Midwest ISO	In Person
Charles Yeung	Southwest Power Pool	In Person



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Home Page: [www.naesb.org](http://www.naesb.org)

## Other Participant Attendance

Participant	Organization	Attendance
Neal Allen	Southern Company	Phone
Terry Bilke	Midwest ISO	Phone
Jonathan Booe	NAESB	In Person
Cory Cummings	NAESB	Phone
Deonne Cunningham	NAESB	Phone
Deanna Kim	Dominion	Phone
Marie Knox	Midwest ISO	Phone
Ross Kovacs	Georgia Transmission Corporation	Phone
Shay Labray	PacifiCorp	Phone
Bruce McAllister	FERC	Phone
Rae McQuade	NAESB	In Person
Marjorie Parsons	TVA	In Person
Barbara Rehman	Bonneville Power Administration	Phone
Narinder Saini	Entergy	In Person
Veronica Thomason	NAESB	In Person
Jill Vaughn	Preferred Legal	In Person
Jimmy Womack	Southwest Power Pool	Phone
JT Wood	Southern Company	In Person
Eric Winkler	ISO-NE	Phone

# **Electronic Tagging Functional Specification**

**Version 1.8.1**

NOT YET APPROVED FOR IMPLEMENTATION

**September 2, 2009**

**Joint Electric Scheduling Subcommittee**

**North American Energy Standards Board – Wholesale Electric  
Quadrant**

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## Section 1 - Functional Description

### 1.1 Introduction

#### 1.1.1 Purpose

This document describes the functional requirements and detailed technical specifications for the implementation of an electronic Transaction Information System (TIS), currently implemented as Electronic Tagging or e-Tag. These requirements and specifications provide a basis for tools designed to facilitate identification and communication of interchange transaction information (e-Tags) between parties in accordance with NERC Reliability Standards and NAESB Wholesale Electric Quadrant Business Practice Standards.

#### 1.1.2 E-Tag Related References

Information related to the JESS (formerly JISWG) can be found at [http://www.naesb.org/weq/weq\\_jess.asp](http://www.naesb.org/weq/weq_jess.asp)

The most recent copy of the e-Tag 1.8.1 XML Schema can be found at <http://reg.tsin.com/Tagging/e-Tag/>

For detailed information regarding NAESB Standards, please see <http://www.naesb.org/>

For detailed information regarding NERC Standards, please see <http://www.nerc.com/>

The Hypertext Transport Protocol version 1.1 is described by W3C RFC 2616 and can be obtained at <http://www.w3.org/Protocols/HTTP/1.1/rfc2616.txt.gz>

The XML Schema Protocol is defined by the W3C and can be downloaded from <http://www.w3.org/2000/10/XMLSchema>

The Simple Method eXchange Protocol (SMXP) was defined by the OASIS Standards Collaborative and can be found at: <http://reg.tsin.com/Tagging/e-tag/>

### 1.1.3 Change Log

Version	Change
1.7096	Accepted all changes in 1.7095 posted document
	Replaced NERC policy references with NERC/NAESB Standards references
	Incorporated Functional Model language
	Added Change Log
	Updated other references and URLs
	Market Re-dispatch (MRD) language and function removed
1.7.097	Removed Passive Approval by Reliability Entities
	Extend e-Tag creation to 48 hours into the past
	Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags
	Remove 24 hour limit on Reliability Adjustments
	Remove Counter Party Reports
	Remove references to MRD
	Add Optional Approval Rights for any PSE cited in the transmission allocation
	Replaced various state diagrams with descriptive wording
	Strike automatic approval of cancellations
1.8	Remove Background section
	Add reference to default ramp rate definitions
	Add new final states and their definitions
	Add Rounding definition
	Add Ramp Duration validation
	Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)
	Modify in-kind loss calculations
	Define which Functional Model entities can be Scheduling Entities (BA)
	Strike Appendix A
	Strike erroneous current level warning
	Carbon Copy list (no approval, sent copies of e-Tag)
	Calculation of ActOnByTime and ImplementTime
	Addition of TimeClassification (Late, OnTime, ATF)
	NERC web site changed to Electric Industry Registry web site
	Added RequestTerminateTag and related handling
	Simplify Recovery function
	Allow ATF e-Tags to be Terminated
	Allow Source or Sink to modify DYNAMIC e-Tag with actual data
	Transmission Allocation must be $\geq$ energy profile.
	Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority Services
	Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard
	Extend e-Tag creation to 168 hours into the past
	Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags

	Current Level no longer distributed (calculated based on approved requests in request order)
	Change Tag Agent, Tag Approval, Tag Authority Services to Agent, Approval, Authority Services
	Change Tag to e-Tag
	Add Pseudo Tie tag type.
	Add functionality to allow Transmission Service Provider to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm in sections 3.6.1.3, 4.6.1.1, and 4.6.1.2
	Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.
1.8.1	Modified CANCELLED definition
	Added statement regarding specification/schema relationship in section 1.4
	Modified sections 1.2, 1.4.1.2, 1.4.9.2, 2.7, 3.6.1.1.1, and 4.7 regarding Secondary Service URLs
	Modified section 1.4.9.4 to clarify the Authority Service archive requirements
	Made changes to sections 1.6.5.1, 2.6.5.2.1, 3.6.5.2.1, and 4.6.5.2.1 to support a 25 hour day
	Added language addressing profile start times and durations in section 2.6.1.1, 3.6.1.1,
	Clarified that entities may not be added or removed in profile change requests in section 2.6.1.3, 3.6.1.3, and 4.6.1.2 and deleted text in 3.6.2.2
	Removed the requirement to include a reason when withdrawing a request in section 2.6.3.2, 3.6.3.2, and 4.6.3.2
	Minor wording correction in 3.4
	Removed a validation item in section 3.6.3.1
	Corrected the spelling of Authority Service Operator in several places and added to definitions
	Added requirement for Authority Service to set ActOnByTime and TimeClassification in section 3.6.3.2 and in 3.6.3.3
	Added requirement for asynchronous response in section 3.6.5.2
	Deleted bullet item from section 4.6.3.1
	Revised references to PKI in section 7.1.1
	Agent, Approval, Authority, and RAS references changed to Agent Service, Approval Service, Authority Service, and RA Service for clarity.
	TSP changed throughout to Transmission Service Provider for clarity
	Created Appendix A – Special Interconnection Implementation Requirements
	Modified 1.4.2.2 and 3.6.1.1.1 definition of duplicate row for the distribution list and modified the distribution list record example
	Added definition of Tagging Entity ID
	Modified 1.4.6 and 2.6.1.3 to clarify that e-Tag authors may adjust DYNAMIC type e-Tags after the fact (after the current scheduling period) in order to reflect metered values. This included language requiring the clearing of any previously existing reliability limits.

	Added Section 8 – Implementation Requirements
	Modified section 3.7 – added language from NAESB WEQ-004 regarding Authority Service implementation and performance
	Added Acronym column to Definitions Table in section 1.2
	Updated links in section 1.1.2
	Modified 1.4.6, 2.6.1.3, and 3.6.1.3 to clarify that e-Tag authors may not the Transmission Allocation profile for DYNAMIC type e-Tags after the fact (after the current scheduling period).
	Modified 3.6.1.3 to allow loss profile adjustments in a DYNAMIC type e-Tag ATF adjustment request.
	Eliminated “spare” column in change table

## 1.2 Definitions

Term	Acronym	Definition
{ Source BA, Sink BA, PSE } Code		Entity Code defined in the Electric Industry Registry
ACTIVE		An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.
Active Approval		An approval or denial that occurred through an entity's deliberate indication of their intent.
After-the-Fact	ATF	A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.
Approval Entity		Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.
Approval Rights		The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.
Approval State		The State communicating an Approval Entity's willingness to implement a particular Request.
Approval State Type		A description of the manner in which an Approval Entity's State was set.
APPROVED		Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, Transmission Service Provider, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.
Arranged Interchange		The state where the Interchange Authority has received the Interchange information (initial or revised).
Asynchronous		A two-part communication, involving a request message followed by a separate response message.

Author Rights		The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.
Authority Service Operator		Responsible for Authority Service report generation and retention and to respond to requests for override - typically the Sink Balancing Authority.
Balancing Authority	BA	The responsible entity that ingrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
Balancing Authority Area	BAA	The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
Base Profile		The profile associated with the new e-Tag, as originally requested.
Block Start Time		Represents the start time within a request. For RequestNewTag it is the Tag Start Time
CANCELLED		Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Composite State of the e-Tag changes from CONFIRMED to CANCELLED as soon as the Request becomes APPROVED. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.
Carbon Copy List	CC	An optional list of entities (BA, Transmission Service Provider, or PSE) specified in an e-Tag that are provided with a copy of the e-Tag
COMMFAIL		A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.
Composite State		This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.

CONFIRMED		The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.
Coordinated Universal Time	UTC	Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).
Correction		A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.
Current Level		<p>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</p> <p>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances (In-Kind losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</p>
DC Tie		A DC transmission facility; specifically, one that provides a connection between two different interconnections.
DC Tie Operator		An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.
DELIVERED		Delivery State indicating that a particular Request was distributed to and received by a party.
Delivery State		A value used to provide information about a party's receipt of a particular Request.
DENIED		Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.

Electric Industry Registry	EIR	Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.
e-Tag		Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.
e-Tag Agent Service		Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority Service and to receive State information for these requests.
e-Tag Approval Service		Software component used to indicate individual Approval Entity responses when requested by Authority Service, as well as submit Profile changes.
e-Tag Authority Service		Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession
e-Tag Code		Unique 7 character transaction identifier used as part of the Tag ID.
Exception Profile		A profile containing time specific changes to original profile values
Exchange		Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.
EXPIRED		Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.
Financial Path		Path defining the financially responsible parties of a transaction, detailing ownership of energy across physical movement of energy as well as purely financial.
Generation Providing Entity	GPE	Merchant selling energy from owned, affiliated, or contractually bound generation.
Implement		Allow energy to be scheduled as described.

IMPLEMENTED		The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.
In-Kind Losses		Transmission losses delivered coincident with energy delivery.
Individual Delivery States		The Delivery State associated with a specific party to the e-Tag.
Interchange Distribution Calculator	IDC	The mechanism used by Reliability Coordinators in the Eastern interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the distribution Factors for the Eastern Interconnection.
Interchange Transaction		An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. A strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, <b>any</b> such flow between a source and a sink point shall be considered an Interchange Transaction.
INVALID		Delivery state indicating that a party received a request distribution, but felt it was not syntactically or semantically correct
Late		A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards
Load Serving Entity	LSE	Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.
Market Entity		PSE, GPE, LSE, or TPSE
Market Level		Desired energy profile for the transaction; level of market-desired flow.
Market Operator		An entity responsible for the implementation of an organized market recognized the FERC.
Maximum Reservation Capacity		The commitment of transmission resources to support a particular transaction; typically the same as actual flow.
Minute Boundary		Date/time value where “seconds” are zero.

NA		Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.
NERC/NAESB Standards		NAESB Wholesale Electric Quadrant Business Practice Standards and NERC Reliability Standards for the Bulk Electric Systems of North America
New e-Tag Request		The initial submittal of Request for Interchange (RFI) to the e-Tag Authority Service
On-time		A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards
OVERRIDE		Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.
PASSIVE		Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.
Passive Approval		An approval that occurred through the expiration of a Request's evaluation window without an active approval; set automatically by the Authority Service when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).
Passive Denial		A denial that occurred through the expiration of a Request's evaluation window without an active approval or denial; set automatically by the Authority Service when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and Transmission Service Provider.
PENDING		Initial Request State and Approval State.
Physical Path		The source to sink route (via intermediate transmission paths) between generation and load.
Profile		A time/level matrix that defines an energy flow or other related information.
Purchasing-Selling Entity	PSE	The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities,

QUEUED		Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.
Ramp Start Time		The time determined using the Tag Start Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Ramp Stop Time		The time determined using the Tag Stop Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Reliability Authority Service	RA Service	Service used to collect transaction information for analysis, particularly with regard to system security.
Reliability Coordinator	RC	The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.
Reliability Entity		BA, RC, SE, or Transmission Service Provider
Reliability Level		Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.
Request		An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.
Request For Interchange	RFI	A collection of required data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing authority. For the purposes of this document, an RFI documents the deemed electrical flow between a source point and a sink point.
Request State		The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.

Scheduling Entity	SE	The NERC glossary defines an SE as an entity responsible for approving and implementing Interchange Schedule. For purposes of this document, a Scheduling Entity is referenced in the e-Tag Data Model as the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.
Secondary Service URL		A single URL registered in conjunction with an entity's Service URL for a secondary agent or approval service. This secondary service receives a copy of all e-Tag request messages sent by an Authority Service to the Service URL and any callback messages in which the secondary service was identified in the query as the target. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the "Forwarding URL" field is used for this purpose.
Security Key		A security token, used to authenticate an entity involved in the e-Tag messaging system
Service		One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority Services)
Service URL		The main URL registered for an entity's e-Tag service implementation.
Sink		Final point of delivery for a transaction.
Sink Balancing Authority	Sink BA	The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)
Source		Initial point of supply for a transaction.
Source Balancing Authority	Source BA	The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.)
State		Either the Request State, Composite State, Individual Delivery State, or Approval State.
Straddle Ramp		Ramp that divides the start ramp duration equally across the profile block start or end time.

STUDY		The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.
Synchronous		Message type in which the requesting message is responded to within the same connection.
Tag Author		Entity that creates and submits an e-Tag; the caller of the Request NewTag method.
Tag ID		Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.
Tag Start Time		The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.
Tag Stop Time		The latest time listed in any part of a tag, including energy, transmission, and loss accounting.
Tagging Entity ID		Unique numeric identifier for each tagging entity as defined in the Electric Industry Registry (EIR)
TERMINATED		Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).
Termination Time		The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.
Test e-Tag		An e-Tag used for diagnostic purposes; does not represent actual transacted business.

Time Classification		Assigned at submittal to each e-Tag request by the Authority Service based on NERC/NAESB standards
Title Transfer		An exchange of energy ownership; may or may not be associated with a physical movement of energy.
Transaction Information System (TIS)		Transaction Information System – currently implemented as e-Tagging.
Transmission Allocation		Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.
Transmission Customer	TC	A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.
Transmission Service Provider		The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.
Valid		Passed syntax checks by an e-Tag Service (i.e. not invalid)
Viewing Rights		The rights of an entity to view transaction details.
WITHDRAWN		Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

### 1.3 Tagging Terminology

In an abstract sense, this implementation an electronic Transaction Information System has the primary purpose to create, manipulate, and maintain two objects – e-Tags and Requests. An e-Tag can be thought of as a collection of Requests, bundled together in one package and relating to a single transaction. Requests can be of various types, and each Request contains its own state and approval history. Each approved Request modifies the e-Tag that it is associated with in some way. E-Tags also maintain their own state (called Composite State), independent from the states of the various Requests that make up that e-Tag.

References to “time” in this document mean a specific date/time in most cases; e.g. Ramp Start Time, Ramp Stop Time, Tag Start Time, etc.

The remainder of this section contains a list of useful terms and definitions relating to e-Tags and Requests.

**Request** - New e-Tags and changes to existing e-Tags are all initiated with a Request. An e-Tag is the composite result of all APPROVED Requests related to that e-Tag. There are six types of requests:

**New e-Tag** – a request to implement a new Interchange Transaction as a physical energy flow, also called a Request for Interchange. An e-Tag that reaches an IMPLEMENTED state will usually transition through the following stages:

1. Request for Interchange – the Request created by the e-Tag Author.
2. Arranged Interchange - once the Authority Service receives the Request.
3. Confirmed Interchange - once the Request is approved.
4. Implemented Interchange – when the current time is past the e-Tag’s ramp start time.

**Curtailement** – a request to limit an energy flow through the limiting of an associated Interchange Transaction

**Reload** – a request to release a limit previously requested through a Curtail Request

**Adjustment** – a Request that modifies energy flow and/or transmission capacity of an Interchange Transaction in order that such a change may be implemented and resources committed

**Termination** – a Request that either reduces energy flow and transmission capacity of an e-Tag to zero for the life of the e-Tag prior to its start so that such a transaction is not started (CANCEL) or reduces energy flow and transmission capacity of an e-Tag to zero starting at a time indicated in the termination Request that is after ramp start time and continuing for the life of the transaction (TERMINATION)

**Extension** – a Request that includes energy flow and/or transmission capacity for unscheduled hours of an Interchange Transaction, in order that such a change may be implemented and resources committed

**Submission time** – the time at which an e-Tag Author submits a Request to the Authority Service for processing. *The submission time is determined by the Authority Service.* Requests are categorized by submission time into one of three Time Classifications based on the timing tables in NERC/NAESB Standards:

1. On-time
2. Late
3. After-the-Fact (ATF)

**Request State** – the overall status of the Request, based on the processing of the Request. Requests are categorized by Request State in the following ways:

**PENDING** - initial Request State

**WITHDRAWN** – final Request State that results when a Request Author submits a WithdrawRequest before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

**APPROVED** – final Request State that results when all entities with approval rights over a Request actively approve it or when no entities with approval rights actively deny the Request, all reliability entities approve the Request, and the Request's assessment period expires.

**DENIED** – final Request State that results when one or more Approval Entities set their Approval State to DENIED and the Request's assessment period expires.

**EXPIRED** – final Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.

**Individual Delivery States** – indicates the successful or unsuccessful transfer of a Request to an entity. The possible Delivery States are:

**QUEUED** – the Request is scheduled for delivery.

**INVALID** – the Request was perceived as invalid by the receiving entity and rejected.

**COMMFAIL** – the Request was undeliverable due to communication problems.

**DELIVERED** – the Request was successfully delivered.

**Approval States** – indicates the intent of an entity to implement a Request. The possible Approval States are:

**NA** – no state is applicable, as the Request has not yet been successfully delivered to the entity or the entity does not have approval rights.

**PENDING** – no indication has been made to show whether the implementation of the Request is supported or not.

**APPROVED** - an indication of supporting the implementation of the Request.

**DENIED** - an indication of opposing the implementation of the Request.

**STUDY** - an indication that the Approval Entity was uncertain whether or not to support or oppose the Request. This state is treated the same as PENDING when the assessment period ends.

**EXPIRED** – an indication that an Approval Entity who is required to actively set Approval State did not actively set Approval State to APPROVED or DENIED before the assessment period ended.

**Approval State Types** – indicates how an entity's state was assigned. The possible Approval State Types are:

**Active** – an Approval Entity actively selected The Approval State.

**Passive** – the Approval State was passively selected due to a time elapse or other non-interactive manner.

**Overridden** – the Approval State was actively modified by the Sink Balancing Authority via its Authority Service acting on the behalf of an Approval Entity that was unable to act on their own.

**Composite State Types** – indicates the overall state of an e-Tag. The possible Composite States are:

**CONFIRMED** –Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is greater than the current time.

**IMPLEMENTED** – Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is less than or equal to the current time.

**CANCELLED** – Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED with the termination time in the Request set to the Tag Start Time

of the e-Tag. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.

**TERMINATED** – Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED with the termination time set after the Tag Start Time of the e-Tag. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its Tag Start Time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).

**PENDING** - Initial Composite State

**WITHDRAWN** – The e-Tag Composite State transitions to WITHDRAWN when the new e-Tag creation Request transitions to WITHDRAWN.

**DENIED** – The e-Tag Composite State transitions to DENIED when the new e-Tag creation Request transitions to DENIED.

**EXPIRED** - The e-Tag Composite State transitions to EXPIRED when the new e-Tag creation Request transitions to EXPIRED.

## **1.4 System Concepts**

The functional requirements address the following basic information and data exchange needs:

- Initial creation of an e-Tag Request representing the transaction,
- Dissemination of the e-Tag Request to all parties directly involved in the transaction,
- Collection of Approval States from all parties with approval rights,
- Forwarding of the Request and e-Tag to appropriate entities and tools, and
- Modifications to the e-Tag throughout its lifetime.

This document approaches the functional requirements for electronic tagging by defining four services: the Agent Service, the Authority Service, the Approval Service, and the Reliability Authority Service.

The functionality that must be supported by each of these services and the entity responsible for providing for these services are defined. There are no restrictions with regard to who may provide these services (i.e., the responsible entity or any one of a number of third-party service providers) nor any restrictions on which services (or all) that a third-party service provider could offer. **Under no circumstances shall a provider of any of these services require any other service provider to implement additional features or functionality beyond these specifications as a condition to properly performing the obligations associated with that service.**

This specification is accompanied by an XML schema. The schema is intended to reflect the specification. Should the specification and schema conflict, the specification is the ruling document.

## 1.4.1 System Architecture

### 1.4.1.1 *Agent Service*

The Agent Service provides the ability for initial creation of an e-Tag and the transfer of that information to the appropriate Authority Service. Purchasing-Selling Entities (PSEs) and all other e-Tag Authors are responsible for providing this service directly or by arranging with a third party to provide this service as their agent. E-Tags created by the Agent Service are forwarded to the Authority Service associated with the Sink Balancing Authority (Sink BA). The Agent Service provides a mechanism for the e-Tag Author to view the Approval State of its transactions via an unsolicited notification mechanism. The Agent Service also provides facilities for the e-Tag Author to make Corrections to e-Tags prior to confirmation, as well as request a Profile Changes to any of their e-Tags following confirmation. These corrections and modifications are also sent and processed via the Authority Service.

### 1.4.1.2 *Authority Service*

The Authority Service is the focal point for all interactions with an e-Tag and maintains the single authoritative “copy of record” for each e-Tag received. Every Sink Balancing Authority is responsible for registering an URL of an Authority Service. The Authority Service forwards all valid received e-Tag Requests to each entity identified in the transaction as having “approval” or “viewing” rights over that Request (see section 3 for distribution list determination), and collects approvals/denials issued by these Approval Services. Based on time and/or the messages received from the Approval Services, the Authority Service arbitrates and sends the final disposition of the Request to each entity in the distribution list. The Authority Service also provides the capability for both Agent and Approval Services to interrogate the current Approval State of any transaction request on demand.

### **1.4.1.3 Approval Service**

The Approval Service receives e-Tag Requests submitted by Agent Services via the appropriate Authority Service. The Approval Service also provides a means for an entity to receive notification of transactions in which they are involved, as well as send approve or deny responses to an Authority Service's presentation of a valid Request (if they have approval rights over the Request). Additionally, the Approval Service allows entities to curtail or otherwise modify the profile of an existing e-Tag (if they have rights to do so). Balancing Authorities, Transmission Service Providers, and Purchasing-Selling Entities are responsible for providing this service directly or for arranging with a third party to provide this service as their agent. Finally, Transmission Service Providers may use the Approval Service to issue corrections or adjustments.

### **1.4.1.4 Reliability Authority Service**

Reliability Authority Services receive all Requests from Authority Services. These e-Tags inform the Reliability Authority Service of the expected flows a transaction will create, and are used by Reliability Coordinators to mitigate constraints should the need arise.

The Reliability Authority Service can be referred to throughout this document as **RA Service**.

## **1.4.2 Tag Identification**

All e-Tags and e-Tag creation Requests shall be uniquely identified by an e-Tag ID. Electronic communications between Agent, Authority, and Approval Services shall require the association of an additional Security Key or Keys to control all interactions related to a given transaction. The following subsections describe the requirements for the creation of the e-Tag ID and Security Key.

### **1.4.2.1 E-Tag IDs**

Every transaction shall be identified by a unique e-Tag ID based on key attributes of the transaction as specified in the Data Model:

- Source Balancing Authority Entity Code
- PSE Entity Code (e-Tag Author PSE)
- Unique transaction identifier (e-Tag Code)
- Sink Balancing Authority Entity Code

The "Source Balancing Authority" shall be defined as the host Balancing Authority in which the generation is located. The "Sink Balancing Authority" shall be defined as the host Balancing Authority in which the load is located. The "e-Tag Author PSE" shall be defined as the PSE who is creating and submitting the New e-Tag Request to the Authority Service.

Since this e-Tag ID and the contents of the e-Tag contain potentially commercially sensitive information, all e-Tag services shall treat such information as confidential.

All services shall reject any attempt to submit as new an e-Tag ID that is identical to an existing e-Tag creation Request's e-Tag ID for a period of one (1) year from the stop date and time associated with the existing e-Tag. Agent Services shall be required to ensure that each e-Tag ID is unique for a period of not less than one (1) year from the stop date and time associated with the last transaction that was assigned that e-Tag ID.

#### **1.4.2.2 Security Keys**

The electronic exchange of e-Tag information shall require the assignment of unique "Security Keys" to be associated with the transaction. Security Keys control communication between the Agent, Authority, Approval, and Reliability Authority Services. The Security Key is a unique 12 character alphanumeric (0-9, A-Z, a-z; case sensitive) security token.

The Agent generates a unique Security Key to associate with the e-Tag at the time of submission. All subsequent messages exchanged between the Agent and Authority Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the e-Tag Author's Agent Service.

The Authority Service shall also generate one unique Security Key for each entry in the distribution list to be associated with the e-Tag on the initial distribution of the e-Tag. All subsequent messages exchanged between the Authority and Approval Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the Sink Balancing Authority's Authority Service.

In certain situations, Security Keys can exist independent of e-Tag IDs (such as the Get e-Tags and Get e-Tag IDs requests). Those situations will be described in detail in the appropriate sections of this document.

The Security Key must either be random or have the appearance of randomness. Although schemes may be used to generate a key, these schemes must not be obvious to the interested observer (for example, APR05991240X is obviously a date and time, but a ciphered version of this, KYZ71434450H, might not be). The Security Key must be considered a security mechanism, and as such, must not be easily deducible by parties lacking first-hand knowledge of the specific Security Key generation mechanism employed by the system.

It should be noted that each Authority Service is assigned by NERC a unique Security Key for interaction with the IDC. This key is only to be used for communication with the IDC, and must be kept confidential. This key secures communications from the IDC to each Authority Service as well. NERC will notify each registered Authority Service with that Authority Service's unique Security Key to be used in all messages between the IDC and Authority Service.

### 1.4.3 Test e-Tags

An e-Tag can be designated as a Test e-Tag for the purpose of troubleshooting a system or component of the system. All Agent, Approval, and Authority Services shall accept and process Test e-Tags and in an identical fashion to all other e-Tags, with the following exceptions:

- Viewing applications **MUST** indicate to the user that the e-Tag is a Test e-Tag.
- Test e-Tags do not require an approving party to evaluate the e-Tag within the Assessment Time as defined in NERC/NAESB Standards.
- Test e-Tags must not be treated as actual e-Tags (the information contained within a Test e-Tag must not be used to make any business decisions).
- The Authority Service shall not initiate the forwarding of these test e-Tags to the RA Service at any time.
- Test e-Tag Requests always transition to a Request State of APPROVED on expiration of the assessment period and no approval entities have denied the Request or when all approval entities have approved the Request.

In addition, the following rules must be observed with regard to test e-Tags:

- Test e-Tags must **ONLY** be used for troubleshooting purposes. System development, training, and demonstration, as well as any other non-troubleshooting related need must **NOT** utilize the Test e-Tag feature.
- A particular PSE (as listed in the EIR) may only issue a total of ten (10) Test e-Tags per clock hour. Any Test e-Tag submissions exceeding this number may be rejected at the option of the service being sent the Test e-Tag.
- Test e-Tags may be rejected at the option of the service provider if they are sent during the last twenty minutes of a clock hour (i.e., xx:40 – yy:00).
- 

Test e-Tags must not reflect authorship that does not match the listed service affiliation in the EIR. If a Test e-Tag is sent from an external system to another system, and the e-Tag Author is a registered user of the receiving system, the receiving system may reject the e-Tag. For example, if PSE XXX is registered to use vendor X, and a message comes in from vendor Y claiming to be authored by PSE XXX, vendor X may reject the message.

### 1.4.4 Communications

All e-Tag messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, procedures on remote machines are invoked; passing any needed data as input parameters to the function or method. When the function is complete, it returns the result of its processing.

#### 1.4.4.1 Method Types

The e-Tag services use various types of methods for various purposes. The methods can be broken up into the following categories.

##### 1.4.4.1.1 Requests

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

#### 1.4.4.1.2 Request Distributions

Request Distributions are the methods used to send requests to all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

#### 1.4.4.1.3 Actions

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### 1.4.4.1.4 Information Distributions

Informational distributions are the methods used to send information related to the State of a particular Request or set of transactions. These are sent to entities to alert them of particular Request's implementation or withdrawal, as well as specific entities approvals and denial of a Request.

#### 1.4.4.1.5 Queries

Query methods are used to search and recover data from an Authority Service or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query.

#### 1.4.4.1.6 Callbacks

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

### 1.4.4.2 *Message Size Limitations*

In order to ensure reliable operation of the e-Tag systems, the following limitations of message size are to be observed:

- Any RequestNewTag or RequestProfileChange specifying a duration greater than 33 days in length may not have a Content-Length greater than 512000 characters. Agent systems should not issue such Requests, and Authorities should reject such Requests if they are received.

## 1.4.5 Financial and Physical Paths

Paths define the flow of both energy flow and fiduciary responsibility. Financial Path components are referred to as **market segments**, while Physical Path components are called **physical segments**.

A physical segment may be one of three types:

- **Generation** that is supplying energy for delivery,
- **Transmission** that is wheeling the energy from one point to another, and
- **Load** that is consuming the delivered energy.

Market segments are financial responsibilities for the receipt and/or delivery of the energy. A market segment typically contains physical segments (illustrating holding of title across physical movement of energy), but may contain no such physical segments (illustrating a non-physical title-holder). Physical segments must be contained within market segments.

An e-Tag may have only one generation segment and one load segment. When ordered, these segments must be indicated as the first and last physical segments in the path, respectively.

For a detailed discussion of Paths and how they function, please see **Section 6.2.2, Market Segments**, and **Section 6.2.3, Physical Segments**.

## 1.4.6 Profile Descriptions

Profiles define the level at which transactions should run, as well as the factors that set those levels. For detailed discussions on how profiles function please see section **6.1.4**.

In general, a profile will have three levels

- The energy flow
- The maximum level at which the energy may reliably flow (default is unlimited)
- The transmission capacity committed to the transaction by the e-Tag Author as a Transmission Allocation

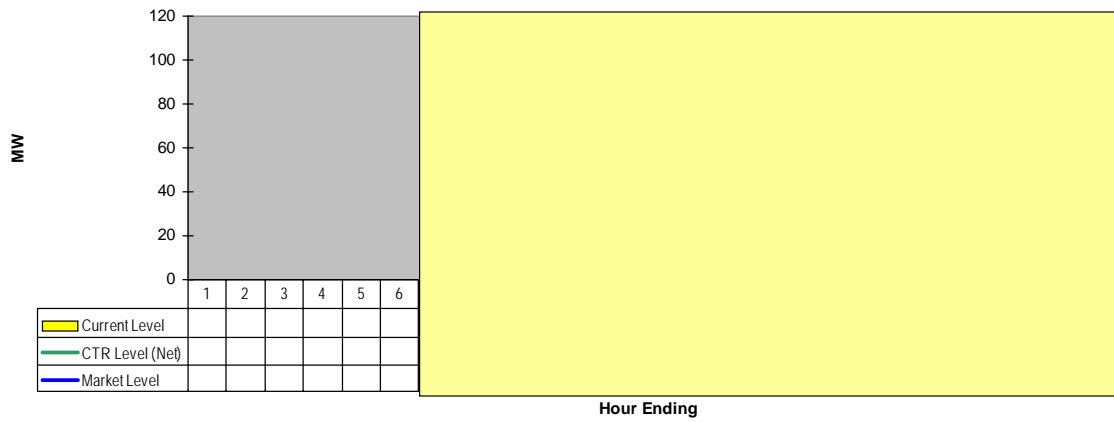
Tag Authors can modify the energy profile up or down without exceeding the Transmission Allocation. Should a curtailment occur for reliability reasons, then the reliability limit must be adjusted to become the new maximum level. The e-Tag Author can modify the energy profile on the e-Tag up or down even while under curtailment, but the reliability limit will always be the maximum level. The lowest of the reliability limits or the market level will indicate the actual flow on the e-Tag. For DYNAMIC type e-Tags, the e-Tag author, Source BA, or Sink BA may make market level profile adjustments after-the-fact (to reflect metered values) but may not adjust the transmission allocation profile. Any previously existing reliability limits must be cleared thus achieving both a reload and a profile change with one profile change request.

Profiles may optionally reflect ramp start and stop durations for each profile block. The ramp stop duration will be ignored on all blocks except for the last profile block. Only the ramp start duration will be used in energy level calculations for all other profile blocks. All ramps imply straddle ramps. Instantaneous ramps are indicated by a zero minute ramp duration. The ramp start and stop data represents minutes over which the generator will increase or decrease generation from the previous block level to the current block level. The ramp beginning and end times for each profile block can be calculated based on the ramp duration and profile block start and end times.

The following diagrams illustrate the relationship between these levels:

### STEP 1 – New Tag Submission

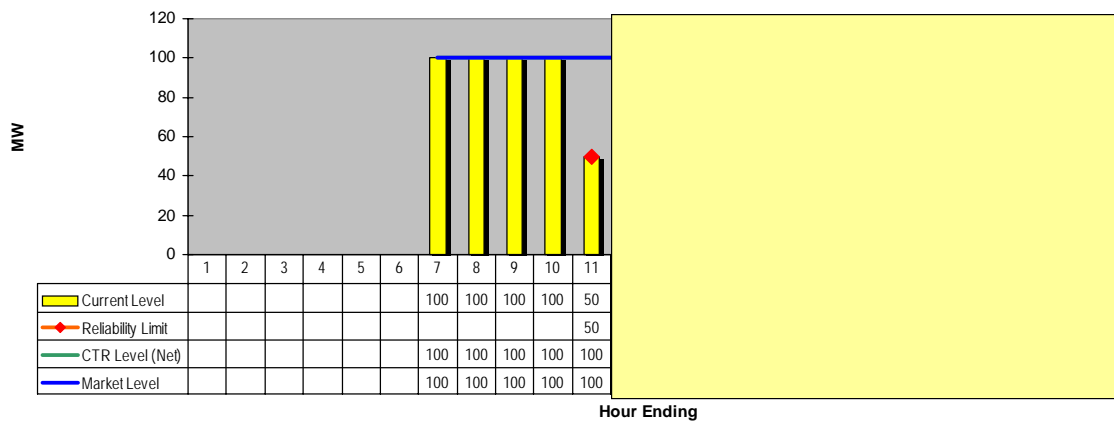
HE7 - HE22 100MW



In Step 1, the e-Tag has been submitted, but has not yet run. The yellow overlay indicates points in the future.

### STEP 2 – Curtailment

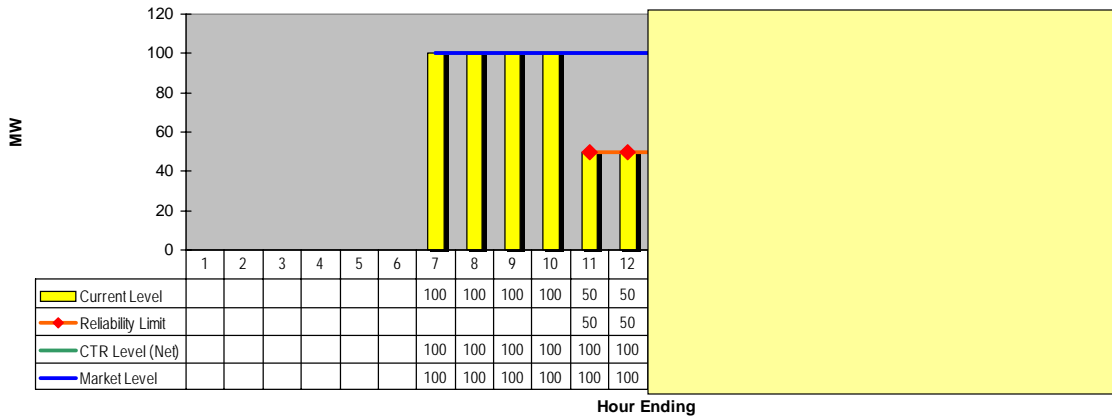
Curtailed to 50MW at 10am



In Step 2, the e-Tag has been running and is curtailed.

### STEP 3 – Curtailment Continues

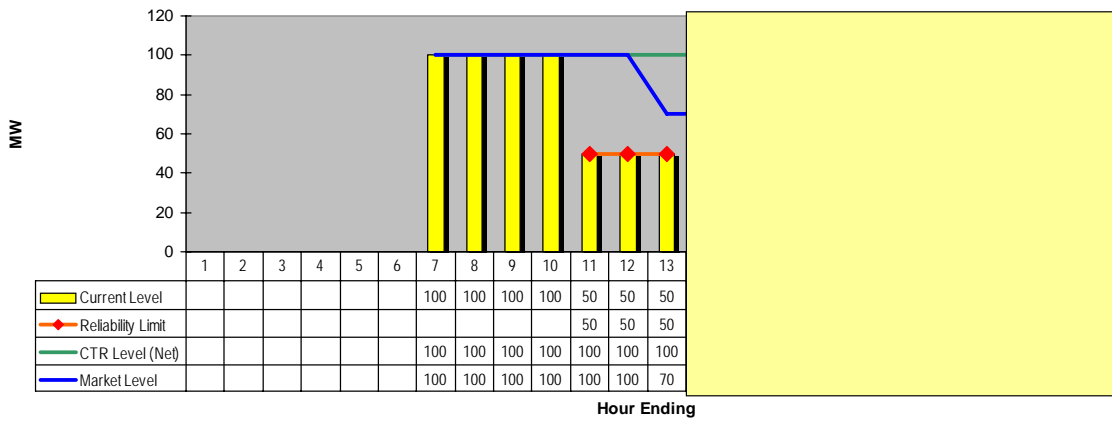
Reissued at each hour



In Step 3, the Curtailment continues and is reissued twice.

### STEP 4 – Tag Author Sets Reload Level

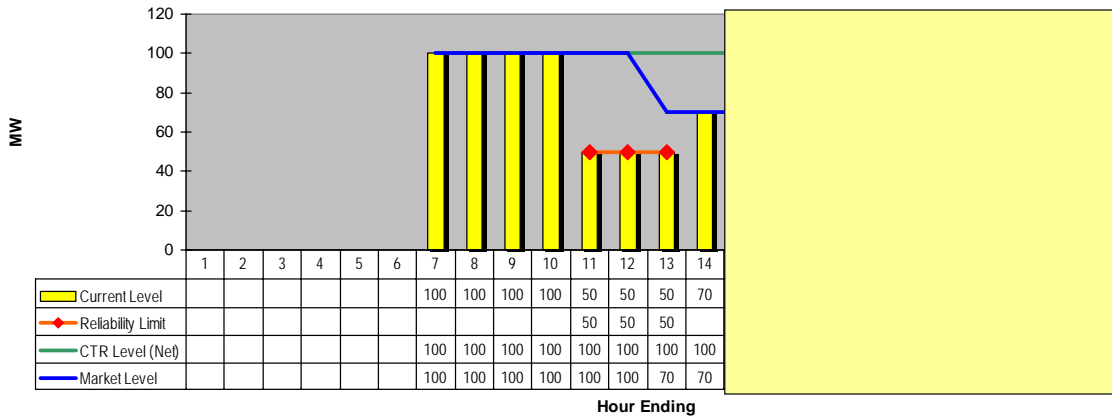
70MW until HE 18



In Step 4, the e-Tag Author elects to limit their transaction to a maximum reload of 70MW until HE 18.

### STEP 5 – TLR Released, Tag Partially Reloaded

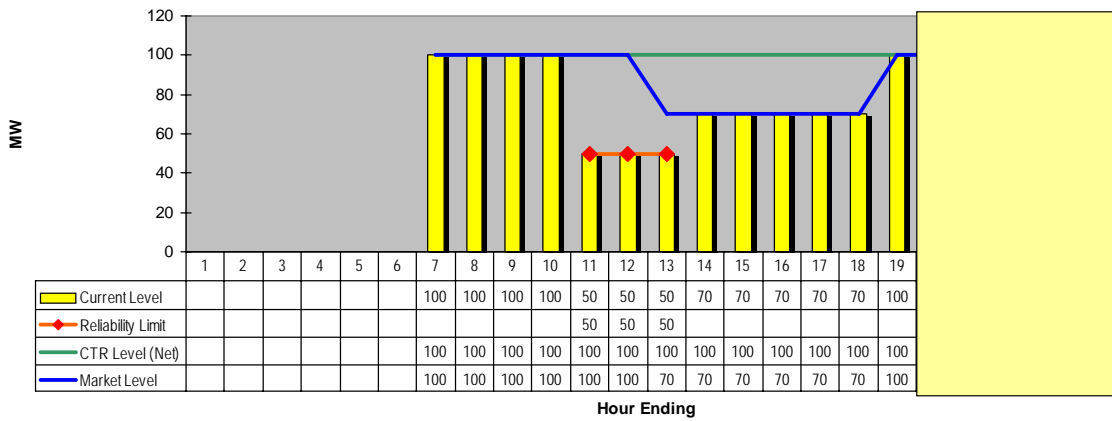
Reloaded to 70MW



In step 5, the e-Tag is Reloaded by the RC/BA to the 70MW level as specified.

### STEP 6 – Tag Fully Reloaded

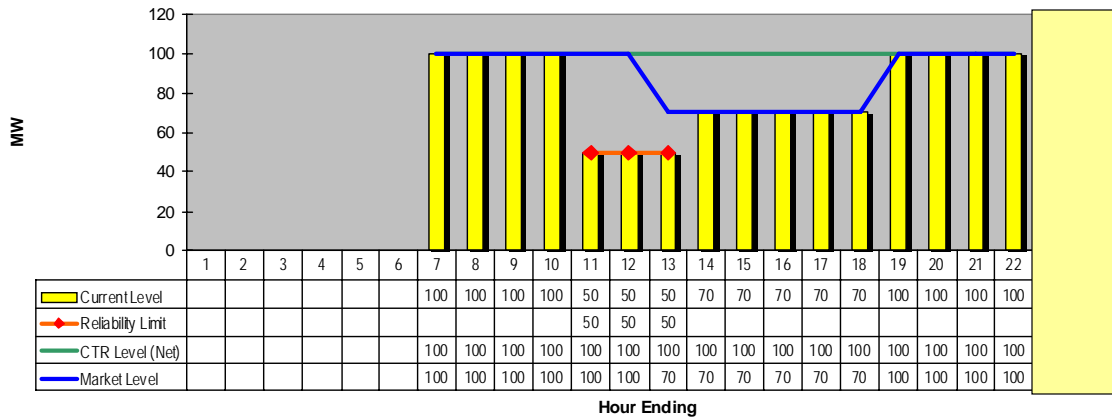
70MW until HE 18



In Step 6, the e-Tag is reloaded by the RC/BA to its previous 100MW level as specified.

## STEP 7 – Transaction Complete

70MW until HE 18

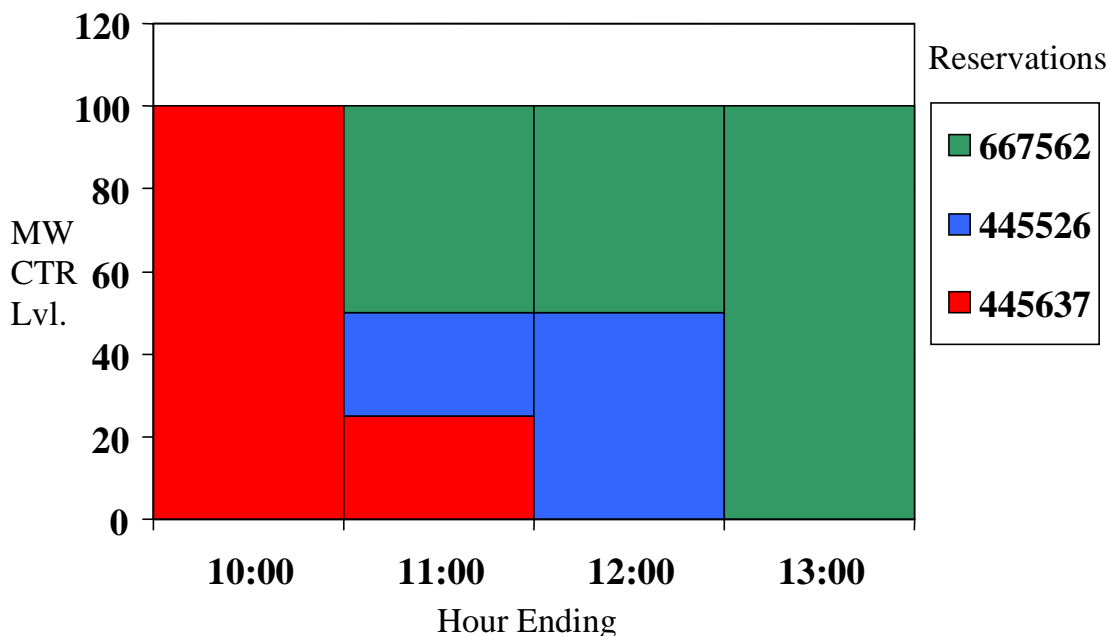


In Step 7, the e-Tag has completed.

### 1.4.7 Transmission Allocation

Transmission Allocation describes the manner in which an e-Tag Author specifies which transmission reservations will be used to support the capacity committed in a Transmission Service Provider’s associated profile. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.

In the example below, an entity is supplying a total of 100 MW of transmission capacity over four hours by using three different reservations in combination:



For more detail on this topic, please see **Section 6.2.4, Transmission Allocations**.

### 1.4.8 Timing Requirements

To enforce Request submission and evaluation timing requirements, the Authority Service shall maintain system time to an accuracy of one (1) second traceable to the National Institute of Standards and Technology (NIST). Approval and Agent Services are encouraged to keep their time synchronized in this manner as well.

All times communicated through an e-Tag shall be noted in UTC. User interfaces and local systems may reflect local time, however, any system using time zones other than UTC must properly convert those times into UTC prior to communicating with other systems.

NERC/NAESB Standards provide details on the manner in which timing requirements should be implemented.

#### 1.4.8.1 Approval of Reliability Changes

**All changes that impact the Reliability Level profile (i.e., curtailments and reloads) must be actively approved in order to be implemented. Profile changes will not be implemented if either actively or passively denied.**

## 1.4.9 Tag Auditing

Each service shall be responsible for keeping audit information describing its interactions with other services. These requirements are described below.

### 1.4.9.1 *Message Rejection Log*

Any service that rejects a message as containing a fault or an error must log the type of rejection, the date/time of the rejection, the sending entity (if identifiable), and the e-Tag ID (if identifiable). This information must be kept available by written request for a minimum of ninety (90) days after the rejection.

### 1.4.9.2 *Historical e-Tag Archive*

Every service shall keep available for retrieval every e-Tag and associated messages received by the service until ninety (90) days past the e-Tag's stop date/time. Authority Services must have this information available to Approval and Agent Services through standard e-Tag querying mechanisms throughout the ninety-day period, as well as through written request by other parties who may require data but not be participants listed on the e-Tag (i.e., NERC). Agent and Approval Services must have these e-Tags available by written request. Approval and Agent Services making a request from the Authority Service for a certain time range must be provided with all e-Tag and associated messages associated with the requestor for that time range.

Messages sent from an authority service to a Secondary Service URL shall be kept for a minimum of seven (7) days from the time that the message was sent.

### 1.4.9.3 *Statistics*

Every service shall maintain statistical information as defined below. This information must be logged, as it occurs, NOT after the fact. In this manner, services may accurately reflect data before it is modified through overrides or updates. This information must be available by written request for a minimum of ninety (90) days in the form or reports. These reports must be written based on the requests processed in one week (00:00 UTC Sunday to 23:59:59 UTC Saturday). This information must be available to parties who may require data but not be participants to any specific e-Tag (i.e., NERC).

- Number of LATE Requests, by requester
- Number of ATF Requests, by requester
- Number of return values of INVALID, by entity
- Number of return values of COMMFAIL, by entity
- Number of returned Faults, by entity.
- Number of Request Approval State Type of PASSIVE, by approver

### 1.4.9.4 *Authority Service Off-Line Archive*

All Authority Services shall archive all message dialogues (all received and issued messages and their associated responses), as follows:

- These message dialogues need not be available for online query
- Authority Service Operators must have the ability to supply written reports listing message traffic for a particular entity or transaction within a reasonable amount of time (e.g., within seven business days).
- Authority Service Operators must retain message dialogues as specified in NERC/NAESB standards.

#### **1.4.10 Rounding**

MW values specified in e-Tag profiles must sometimes be integrated into MWh values across appropriate schedule intervals. E-Tag profiles that start or stop within schedule intervals may result in fractional MWh values being calculated. These MWh values must be rounded to the nearest whole MWh (< .50 down, >= .50 up).

Calculation of aggregated data such as hourly, daily, monthly, and e-Tag totals must be performed in accordance with applicable NERC/NAESB Coordinate Interchange Standards.

#### **1.4.11 Carbon Copy List**

E-Tags may optionally contain a list of entities (BA, Transmission Service Provider, or PSE) that are provided with a copy of the e-Tag. This list is set as part of an e-Tag creation request and can't be changed by subsequent corrections, adjustments, etc. E-Tag Authors may select up to five entities for inclusion in this list. These entities are provided with a copy of the e-Tag and any subsequent changes in the same manner as which entities in the Financial Path are provided with copies of the e-Tag. These entities will not be given approval rights and must not appear in any other role in the e-Tag. For entities of type PSE, all messages will be sent to the registered agent URL. For entities of type BA and Transmission Service Provider, all messages will be sent to the registered approval URL.

## **1.5 Training Requirements**

### **1.5.1 User Guides**

Anyone developing e-Tag software must provide a user guide, which shall describe, at a minimum, the following information:

- The target user (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

### **1.5.2 User Education**

Anyone developing e-Tag software must develop education programs for the use of their software. Education programs must cover the following topics:

- Who the target user is (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

Education programs may be developed for self-study, online education, or other means. The developer may offer education workshops; however, the cost of such workshops may be borne by the software customer.

## **1.6 Functional Concepts**

### **1.6.1 Initiating a Request**

Requests are initiated in order to create or modify e-Tags.

#### **1.6.1.1 Submitting a New e-Tag Request**

Submitting a New e-Tag Request is the process in which an e-Tag Author presents a completed RFI/e-Tag to the e-Tag Authority Service for processing. The e-Tag Author uses its Agent Service to write the e-Tag and then communicate that e-Tag as a request to the Authority Service. The Authority Service then processes the transaction and manages the state of the New e-Tag Request. Using the time of receipt and the Ramp Start Time, the Authority Service sets the ActOnByTime and the TimeClassification (OnTime, Late, or ATF) based on the NERC/NAESB Interchange Standard timing tables. A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1.

#### **1.6.1.2 Submitting a Correction Request**

The e-Tag Author makes e-Tag Corrections when a portion of the e-Tag data must be changed. A correction to an e-Tag can only occur prior to that e-Tag attaining a Composite State of CONFIRMED or IMPLEMENTED. During the New e-Tag Request approval process, in which parties evaluate the transaction for ability to implement, the e-Tag Author may notice or be informed of a needed change in the e-Tag. That change may be written and submitted using the Agent Service.

The correction resets the Request State for entities affected by the correction, distributes the correction, and requires entities affected to re-evaluate the Request using the corrected data. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables. Unaffected entities need not re-approve the e-Tag. Affected entities are defined in section 1.6.2.2.

Transmission Service Providers may also submit a correction. In this case, the Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider (TPCode). The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) and the profile may not be extended. Transmission Service Provider created Correction Requests are unilateral and require no approval by any other entity. Upon receipt of a corrections submittal from a Transmission Service Provider, the Authority Service does not reset the ActOnByTime or TimeClassification but will redistribute the correction.

NERC/NAESB Standards provide additional details on the manner in which corrections should be made.

### 1.6.1.3 **Submitting a Profile Change Request**

Changes to a Profile can be requested by several different parties and for three primary reasons:

- To implement market-based modifications to the Transmission Allocation profile.
- To implement market-based desires to modify or extend energy flow
- To implement reliability-based desires to modify energy flow (i.e., curtailments and reloads)

When any of the above possible reasons are needed, the party wishing to implement a change to a Profile will use their appropriate e-Tag service to write and send a change Request to the Authority Service. The Authority Service then processes the transaction Request and manages the state of the Request. When a profile change is requested for reliability purposes (i.e. curtailment or reload), the Request author must submit a modified profile at the POR or POD of any single physical segment; the Authority Service will then calculate the approximate losses for all other profiles, if applicable. When an e-Tag Author requests a profile change, they must provide all appropriate profiles necessary to reflect appropriate losses.

## 1.6.2 Request Distribution

### 1.6.2.1 **Distributing a New e-Tag Request**

When an agent submits a New e-Tag Request to an Authority Service, the Authority Service distributes copies of that e-Tag to the transaction's participants. Transaction participants include all entities specified in the physical and market path, entities selected in the Carbon Copy list, and any other entities as specified in the NERC/NAESB Interchange Standards. The rights associated with each participant are defined in NERC/NAESB Standards. Entities in the Carbon Copy list must not be given approval rights.

The Authority Service provides a copy of the new e-Tag to each participant, along with a description of their role in the transaction. Each receiving Approval then processes the Request and solicits approval of the Request from its using participant.

### 1.6.2.2 **Distributing a Correction Request**

Corrections are distributed to all entities that received the original e-Tag. Entities specifically impacted by the correction are asked to re-evaluate the e-Tag based on the corrected information. Impacts of corrections are defined in the following table.

Correction Type	Impacted Entity
<i>Any allowable correction to a Physical Generation Segment</i>	<i>Source BA, Generation Providing Entity</i>
<i>Any allowable correction to a Physical Transmission Segment or Transmission Allocation</i>	<i>Transmission Service Provider, Scheduling Entities (Intermediate Bas), Transmission Customer</i>
<i>Any allowable correction to a Physical Load Segment</i>	<i>Sink BA, Load Serving Entity</i>

<i>Any allowable correction to a Market Segment</i>	<i>Purchasing-Selling Entity</i>
<i>Any allowable correction to any product code (energy or transmission) made by the e-Tag Author</i>	<i>In addition to the above, the last Physical Transmission Segment's Transmission Service Provider, LSE, Sink BA</i>
<i>Transmission Service Provider correction</i>	<i>No re-evaluation required, no approval required</i>

Corrections are not permitted to add or remove participants from an e-Tag.

Approval Rights over the transaction remain as established in NERC/NAESB Standards. Entities impacted by corrections that are required to approve the transaction must be alerted to the correction. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables.

NERC/NAESB Standards contain additional information regarding the processing of corrections.

### **1.6.2.3 *Distributing a Profile Change Request***

Profile Change Requests are distributed to all entities that received the original e-Tag. Depending on the type of change requested, the parties required to approve the Request may vary. NERC/NAESB Standards describe the entities required to evaluate the modification and the criteria they should use in their evaluation.

## **1.6.3 E-Tag Request Actions**

### **1.6.3.1 *Approving and Denying Requests***

Approval entities will use a variety of methods, consistent with NERC/NAESB Standards, to determine whether an e-Tag Request should be approved or denied. Approval entities must actively approve or deny all requests within a specified Request evaluation period.

NERC/NAESB Standards provide details on the timing requirements under which requests should be made and evaluated.

When an approval entity decides to approve or deny a Request, the entity utilizes its Approval action to change the Approval State to "APPROVED" or "DENIED".

An approval entity has the option to change its Approval State at will, until the Request State has reached a final state.

If the entity wishes to indicate that it is reviewing a Request, but will not have an answer for some time, the entity can elect to change its Approval State to "STUDY". The action of placing an e-Tag in a STUDY state does not extend the approval window. The Approval Entity must still act in a timely manner to set the Approval State to APPROVED or DENIED before the Request evaluation deadline has passed.

The Authority Service collects these approval States and uses the indicated dispositions to determine transaction request implementation and rejection. NERC/NAESB Standards describe the manner in which an Authority Service determines the resolution of a particular pending Request. Once an e-Tag has reached a final state, all parties are informed of the resolution

### **1.6.3.2            *Withdrawing a Request***

For both New e-Tag Requests and Profile Change Requests, the Request initiator may withdraw the Request at any time up until the Request has reached a final state by submitting a WithdrawRequest message. If a Request has already been APPROVED, then that Request cannot be WITHDRAWN. In order to withdraw a Request, the initiator uses its Agent or Approval Services to send a request to the Authority Service to withdraw the Request. Upon timely receipt of the WITHDRAW request, the Authority Service will consider the Request WITHDRAWN and process that event accordingly, distributing notification of the Request State change to all parties.

The only party that may withdraw a Request is the original initiator of a Request or holder of the initiator's Security Key. No Request may be withdrawn without a valid Security Key.

### **1.6.3.3    *Canceling a Request***

Should an e-Tag's author wish to back out of a CONFIRMED e-Tag, that entity must submit a RequestTerminateTag message to the Authority Service. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the cancellation request is approved, the Composite State of the e-Tag is set to CANCELLED and processed accordingly with both the energy and transmission allocation profiles set to zero.

### **1.6.3.4    *Terminating an e-Tag***

Should an e-Tag's author wish to back out of an IMPLEMENTED e-Tag, that entity must submit a RequestTerminateTag message that includes a valid termination time. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the termination request is approved, the Composite State of the e-Tag is set to TERMINATED at the termination time and processed accordingly. The energy and transmission allocation profiles will be set to zero effective at the specified start time.

Should an entity wish to correct an invalid ATF e-Tag, that entity must submit a RequestTerminateTag. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If approved, the Composite State of the e-Tag is set to TERMINATED immediately and processed accordingly with both the energy and transmission allocation profiles being set to zero.

## 1.6.4 Information Distribution

### 1.6.4.1 *Distribution of Request Approval State*

When a significant status change occurs (as defined in section 3.6.4.1), the Authority Service responsible for the e-Tag will notify all parties of that change. By doing so all parties are advised of the current disposition of the e-Tag. In the case of entities electing to deny a New e-Tag Request, the e-Tag Author may attempt to correct the e-Tag in order to satisfy the needs of the denying party.

### 1.6.4.2 *Distribution of Request Resolution*

When the final disposition of a Request has been determined (e.g., APPROVED, DENIED, WITHDRAWN, etc.), the Authority Service responsible for the e-Tag will notify all parties electronically of the request's resolution. By doing so, all parties are advised that they should either implement or discard the request.

### 1.6.4.3 *Distribution of Potential TLR Profile Change*

The Reliability Authority Service may issue from time to time a warning notification called Potential TLR Profile Change. These warnings are distributed electronically to each Purchasing-Selling Entity listed on the e-Tag. These notices are preliminary, and may not reflect final curtailments.

Potential TLR Profile Change warnings are issued at the time a Reliability Coordinator requests a set of curtailments, but prior to the final confirmation and issuing of those curtailments by the RA Service. These warnings can be used by market participants to prepare for curtailments. The warnings may also be used by market participants to proactively modify their transactions in ways that address the reliability needs of the system without compromising the financial positions of the marketplace.

## 1.6.5 Query Functions

Queries may not be abused through excessive querying. General rules for this functionality are as follows:

- No service may query for the same data more than once (1) per minute
- Querying may NOT be considered a replacement for the requirement to have a dedicated listener for inbound information distributions. Services that observe behavior counter to these requirements may ignore such requests if the processing of those requests represents a threat to the integrity of the system. Prior to ignoring the requests, contact must be made with the offending entity and resolution be attempted. If the attempts to resolve the issue fail, the recipient of the requests may block those requests, provided.
  - The processing of those requests represents a real, *documentable* threat to the integrity of the system,
  - The threat is fully documented (i.e., processor logs, customer complaints, etc...)
  - That recipient has met the above minimum requirement, and

- The attempt to address the problem has been documented as well (i.e., E-Mails, Telephone recordings, etc...).

Some queries are processed through two-part messages, or asynchronous messages. In these types of messages, a query is made, and the recipient acknowledges receipt of the query, but does not respond immediately. The connection between the systems is broken, and the recipient processes the message. Upon completion of the processing, the recipient issues a callback message to the original query author and provides the results of the processing. In this manner, the recipient of the query may manage the processing of such queries more efficiently without threat to the integrity of the system (due to long complex queries that may take significant time and resources to process).

#### **1.6.5.1 Querying for e-Tag Summaries**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query Authority Services for a list of e-Tag summaries for a specified period of time for e-Tags in which they participate. Query parameters allow the ability to retrieve e-Tag summaries that:

- were created/last modified during a specified period of time, OR
- have a profile with the first start/last stop intersecting the specified period of time.

E-Tag data may be retrieved for past, current, or future time ranges. This method is intended to be used for emergency operational e-Tag recovery, and is not designed to be used for continuous real-time polling. The duration of the specified time period must not be greater than 25 hours. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Querying for e-Tag summaries is an Asynchronous message.

#### **1.6.5.2 Querying for an e-Tag**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query for the current data set that describes an e-Tag from the Authority Service. This includes all Request data associated with an e-Tag, including a New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

#### **1.6.5.3 Querying for e-Tags**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query for a set of data that describes several e-Tags from the Authority Service. This includes all Request data associated with an e-Tag, including a New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid Security Keys (or, for Asynchronous message, must have a listener registered for the entity they represent). Queries for multiple e-Tags are processed through Asynchronous messages.

#### **1.6.5.4 Querying for an e-Tag's History**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a list of all of the methods that

have been applied to a single e-Tag. This query allows a participant to re-construct the complete set of actions that were taken against an e-Tag. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Queries for multiple e-Tags are processed through Asynchronous messages.

#### **1.6.5.5 Querying for Request IDs**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query an Authority Service for a list of Request IDs, in order to verify synchronization with the Authority Service's log of requests. Should an entity discover that they are not synchronized with the Authority Service then, this listing of Request IDs may be used to query an Authority Service node for the corresponding Request messages. The default behavior of the Authority Service node is to return all Requests grouped by Request State (e.g., PENDING, APPROVED, etc.) and ordered by original send time. An entity may ask that the listing be filtered based on one or more Request States. Once the Request ID listing has been retrieved, an entity may query the Authority Service node and retrieve sets of Request messages.

A Request ID listing may be used in two ways. The first is to notify an entity of requests they need to retrieve after communication failure. The second is for an entity to determine for itself which requests it needs after missing requests are detected. In either case, the Authority Service node may determine based on network traffic and the absence of messaging faults the number of Requests that may be retrieved at one time.

Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

#### **1.6.5.6 Querying for a Specific Request**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a copy of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

#### **1.6.5.7 Querying for a Specific Request's State**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for the States of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

#### **1.6.5.8 Querying for Service Availability**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may use the QueryAvailability message to query any e-Tagging service regarding its availability to process messages. For purposes of enforcing the restriction that "no service may query for the same data more than once (1) per minute",

QueryAvailability messages sent to the same URL are considering to be querying for the same data, even if the ToEntity code is different in the messages.

## Section 2 - Tag Agent Service Functional Requirements

### 2.1 Introduction

All Purchasing-Selling Entities (PSEs) and any other parties responsible for submitting Arranged Interchange shall communicate the necessary information via the Agent. The Agent Service shall comply with all functional requirements set forth in this document. Users may elect to comply with these Agent Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Agent Service shall provide facilities to:

- Accept and validate input e-Tag data from the user.
- Generate all XML necessary to completely specify the transaction as defined in the e-Tag Data Model based on user input data.
- Assign and maintain the correspondence between each transaction's e-Tag ID and e-Tag Author's Security Key.
- Identify the Authority Service associated with the registered Sink BA in the transaction and electronically communicate the e-Tag ID, Security Key, and associated e-Tag data to that Authority Service.
- Receive unsolicited information messages regarding e-Tags that they are a party to but for which they have no direct approval rights.
- Query Authority Services for the current State of each transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to correct any pending transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to withdraw any pending transaction or request submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to modify any existing transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Receive unsolicited information from the other e-Tag services regarding e-Tag updates, curtailment warnings, etc.

Information systems designed to provide more than one e-Tagging service (e.g., Agent and Authority Services) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

## **2.2 Registry Usage**

The Agent Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A listing of all such entities shall be maintained and available for downloading from the Electric Industry Registry web site. The Agent Service shall supply a procedure to allow updates from the EIR on demand as well as on a prescheduled interval. The EIR shall be in a format defined in a document posted on the EIR's web site.

The Agent Service must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

## **2.3 Tag Data Entry and Viewing**

The Agent Service shall provide a mechanism for the user to input, edit, and view e-Tags, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document, with the exception that the user shall have the facilities to supply all transaction related information necessary to create complete, valid e-Tags, as well as the interfaces to view those e-Tags.

### **2.3.1 Tag ID Creation**

Each e-Tag submitted for approval to any Authority Service by the Agent Service shall be identified by an e-Tag ID. This e-Tag ID must not be identical to any used previously to represent transactions with effective stop dates less than one year in the past. *See Section 1.4.2.1 "Tag IDs"*.

### **2.3.2 Security Key Creation**

A unique Security Key shall be associated with the initial transmission of an e-Tag from the Agent Service to the appropriate Authority Service. The Agent Service shall be responsible for generating this Security Key consisting of a unique 12 character token. All subsequent messages exchanged between the Agent and Authority Services in regard to this e-Tag shall refer to both the e-Tag ID and Security Key assigned by the user's Agent Service. *See Section 1.4.2.2 "Security Keys"*.

## **2.4 Date and Time Handling**

The Agent Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchange with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. The Agent Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Agent Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time. All start and stop times in any e-Tag request must be on a minute boundary (i.e., whole minutes).

## **2.5 Data Validation**

The Agent Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

## **2.6 Function Implementation**

The Agent is responsible for being able to call the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributePotentialTLRProfileChange
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

### **2.6.1 Initiating a Request**

The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink Balancing Authority on the e-Tag. Send the XML message created during the

first step to this URL as the payload of an HTTP message, and wait for the response.

- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### **2.6.1.1 Submitting a New e-Tag Request**

**Write Request** – The e-Tag Author must write a complete representation of the transaction as defined in NERC/NAESB Standards and supported in Section 6, Data Model Overview. The Author must also provide any additional parameters necessary to successfully call the RequestNewTag method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1. Specifically, Agent Services must submit all appropriate profiles, but are not allowed to submit Current Level profiles. All Correction IDs must be set to zero in the New e-Tag Request.

**Verify Semantics** – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag being sent must not contain a Profile representing a transaction starting more than 168 hours in the past.
- ATF e-Tags must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the Scheduling Entity field is left blank, the Agent Service must ensure that a BA code that is identical to the Transmission Service Provider code exists prior to submission to the Authority Service. If no BA code identical to the Transmission Service Provider code is found, the Request is invalid.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

**Store Reference Number** – The Authority Service will assign the new e-Tag a reference number, through which the e-Tag Author may query. All New e-Tag Requests will receive a request ID of zero (0).

### **2.6.1.2 Submitting a Correction Request**

Write Request – The e-Tag Author is responsible for creating the e-Tag correction(s) if needed. The e-Tag Author must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to contract reference number (OASIS assignment reference number) must not only contain the reference number, but also the Transmission Allocation ID, a reference to the Parent Segment, the Product, and the associated transmission customer or TPSE.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached a final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Agent Service must record these numbers for later reference and integrity verification.

### **2.6.1.3 Submitting a Profile Change Request**

Write Request – The e-Tag Author must write a complete representation of the Profile Change to the e-Tag. The Author must also provide any additional parameters necessary to successfully call the RequestProfileChange method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). e-Tag Authors are required to submit all necessary profiles to support the desired change(s); Authority Services will not auto-generate upstream/downstream values as done during reliability limit setting. Agent Services are not allowed to make changes to the Reliability limits except in the case of DYNAMIC type e-Tags where changes made by the Agent Service to the market level profile after the fact (to reflect actual metered values) will clear any previously existing reliability limits. Agent Services are not allowed to make changes to the Transmission Allocation profile when submitting any ATF adjustment (including DYNAMIC type e-Tags ATF adjustments). Furthermore, Agent Services are not allowed to submit Current Level profiles, because these profiles are calculated.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated

- Profile Changes can only occur once an e-Tag has transitioned to the Composite State of CONFIRMED OR IMPLEMENTED.
- Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Extensions must be received NO LATER than the last time specified in any profile in the e-Tag. e-Tags may NOT be extended once the e-Tag's profile (including any previous extensions) has been completed. ATF e-Tags may not be extended.
- Profile change requests may not add or remove any entity.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the Profile Change a request number through which the e-Tag Author may query for Request State. That number will always be greater than zero (0).

### **Additional Function Implementation Details**

It is possible for an e-Tag Author to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should an e-Tag Author need to modify a transmission allocation then the e-Tag Author must specify the change in the same manner in which profile change or extension would be performed. For example, if a request was made to extend an e-Tag for an additional hour (while intending to utilize the same transmission reservation as used in the previous hour), then an allocation exception would be inserted that specified the additional hour.

Modifications to DYNAMIC type e-Tags more than one hour in the past are used to set the actual interchange quantity. The current level needs to be set to this actual interchange quantity regardless of any other profile values. This is achieved by clearing any existing reliability limit and setting the Market Level profile.

## **2.6.2 Request Distribution**

The Agent Service only receives three types of Request Distribution – New e-Tag Request Distributions, Correction Request Distributions, and Profile Change Request Distributions.

Upon receiving a distribution message, the agent software should decode, parse, and validate the XML message. If the message doesn't pass syntactic and semantic validation, then the Agent Service must return a fault or error response to the sender. If the message does pass validation, then the agent must return a success response to the sender. Either way, the Agent Service software is required to provide a valid XML response (success or failure) to the sender of any distribution message.

### **2.6.2.1            *Processing a New e-Tag Request Distribution***

New e-Tag Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method sections must not be violated
- An e-Tag with the ID presented must not already exist on the Agent Service

### **2.6.2.2            *Processing a Correction Request Distribution***

Correction Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached their final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Agent Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the Agent Service Operator that the correction has occurred, highlighting the correction for their inspection
- Immediately consider re-setting any previous e-Tag assessment action (APPROVED, DENIED, STUDY, etc.) of an approval entity that is impacted by the correction

### **2.6.2.3            *Processing a Profile Change Request Distribution***

New Profile Change Request Distribution messages must pass the following rules in order to be considered valid:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.6.3 Request Actions

### 2.6.3.1 *Approving and Denying Requests*

The Agent Service has no requirements with regard to Request Approval and Denial.

### 2.6.3.2 *Withdrawing a Request*

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority Service at the time the request was made.
  - The original Security Key for the transaction that was used in the e-Tag Creation message.
  
- Withdraw messages must not be sent for requests that have already reached a final state (IMPLEMENTED, DEAD, etc.).
- Withdraw messages may be sent for ATF Requests that have a Request State of PENDING.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- The Request State is set to WITHDRAWN.
- WITHDRAWN is a final Composite State.

### 2.6.3.3 *Cancelling an e-Tag*

The following procedure should be used to cancel an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The message must include the original Security Key for the transaction that was used in the e-Tag Creation message. Specify the termination time as the Tag Start Time of the e-Tag.
- RequestTerminateTag messages must only be sent for e-Tags with a Composite State of CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag message must contain a termination start time that is equal to the Tag Start Time (if it is later it could only transition to TERMINATED).
- Only CONFIRMED e-Tags may transition to CANCELLED e-Tags.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.

- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Upon cancellation, all pending requests for the cancelled e-Tag are set to a Request State of DENIED.
- CANCELLED is a final Composite State.

### **2.6.3.4 Terminating an e-Tag**

The following procedure should be used to cancel or terminate an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the Request ID provide by the Authority Service at the time the request was made and the desired termination time. The termination message must also include the original Security Key for the transaction that was used in the e-Tag Creation message.
- RequestTerminateTag messages are only valid for requests that have reached the state of CONFIRMED, IMPLEMENTED, or TERMINATED.
- RequestTerminateTag messages may be used for IMPLEMENTED ATF e-Tags.
- Termination of a TERMINATED e-Tag may only change the termination time to an earlier time than the last approved RequestTerminateTag Request.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Once approved, the Composite State of the e-Tag becomes CANCELLED or TERMINATED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.
- Both CANCELLED and TERMINATED are final Composite States.
- It is acceptable to terminate an e-Tag multiple times, assuming that the termination time of each termination message is earlier than the termination time of the prior termination messages.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with block end time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, are set to a Request State of DENIED.

## 2.6.4 Information Distribution

### 2.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Approval State Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 2.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Resolution Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

When a Request is resolved to a state of APPROVED, then it should be considered complete and the Request data should be applied to the e-Tag. When a Request is resolved to WITHDRAWN, DENIED, or EXPIRED the data in the Request should be disregarded.

### 2.6.4.3 *Processing a Potential TLR Profile Change Distribution*

The following validation criteria must be checked when an Agent Service receives a Potential TLR Profile Change Distribution message:

- The e-Tag IDs Referenced in the message must be held by the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

Agents may elect to verify the validity of the Potential TLR Profile Change Distribution. To do this, the Agent Service must send a Callback message to the RA Service that issued the Potential TLR Profile Change Distribution. The Callback must contain the same Security Key presented to the Agent Service as part of the original TLR Profile Change Distribution message. If the Agent Service is unable to connect to the RA Service or if the RA Service replies with a Fault, the Agent Service should attempt to retry the message, as described in section 7.1.1.1.

## 2.6.5 Query Functions

### 2.6.5.1 Synchronous Queries

Synchronous Queries include the following:

- Query e-Tag
- Query RequestIDs
- Query Request
- Query State
- Query Availability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 2.6.5.1.1 Query for an e-Tag

Agent Service must specify a valid e-Tag ID and the associated Security Key they used to submit the original New e-Tag Request.

#### 2.6.5.1.2 Query for Request IDs

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request. Optionally, the user may elect to filter Request ID's based on the resolution of the requests associated with the e-Tag (i.e., show only IMPLEMENTED Requests).

#### 2.6.5.1.3 Query for a Request

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID they wish to retrieve.

#### 2.6.5.1.4 Query for a Request's State

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID for the desired State information.

#### 2.6.5.1.5 Querying for System Availability

Agent Service must specify a particular system for which to query availability - by both entity desk and service (Agent, Approval, Authority, or RA Service).

Agents should respond back to queries for system availability as follows:

- If the Agent Service is operating correctly, the Return Value should be SUCCESS.
- If the Agent Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Agent Service should indicate that error.

### **2.6.5.2 Asynchronous Queries**

Asynchronous queries include the following:

- Query Summaries
- Query e-Tags
- Query History

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message from the Authority Service. The response message will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Agent Service's registered URL, and will include the same Security Key used by the Agent Service to submit the query. The Agent Service should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### **2.6.5.2.1 Query Summaries**

Agent Service must specify either an Active Range or a Last Modified Range for which the e-Tag summaries should be returned. The Active Range is used to specify a range of time during which an e-Tag must have been "active" (i.e., start or end date/time of the e-Tag falls within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a Request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When an Approval or Agent Service requests recovery over an outage range, the service must create a list of unique URLs for Authority Services and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority Service should return data for all tags that are visible to the requestor in this case,

regardless of which the Authority Service's companies is listed as the intended message recipient.

Agent Service must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Agent Service creates a Query Summaries message:

- The rules described in the Data Model and Method Descriptions section must not be violated
- The Range specified must not exceed twenty-five (25) hours. Authority Services are only required to provide 25-hours of information in response to any single query.

The following validation criteria must be checked when an Agent Service receives a Query Summaries Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the Summaries Query to the Authority Service

#### **2.6.5.2.2 Query e-Tags**

The Agent Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. The Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing Security Keys can be recovered using the Query Summaries message. The user must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### **2.6.5.2.3 Query History**

Agent Service must specify a valid e-Tag ID and Security Key. The Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the Security Key provided by the Authority Service through a Distribute message. Missing Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Agent Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## **2.7 Availability and Performance**

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## Section 3 - e-Tag Authority Service Functional Requirements

### 3.1 Introduction

All entities responsible for performing the Balancing Authority (BA) function shall provide the necessary hardware, software, and/or services to implement the Authority Service. The Authority Service shall comply with all functional requirements set forth in this section. BAs may elect to comply with these Authority Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Authority Service shall provide facilities to:

- Accept as input e-Tag data transferred in compliance with this document from any Agent Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly.
- Identify all entities having approval rights over the transaction request, and transfer the request to the associated Approval Services for evaluation
- Identify all entities entitled to an informational copy of the transaction request, and transfer the request to the associated Agents and Approval Services.
- Manage each request's approver's Approval States and overall Request State based on communication with the Agent and Approval Services.
- Verify the identity of each approval entity attempting to approve or deny a Request based on the presented e-Tag ID and Security Key, and update the entity's Approval State and the Request State, as appropriate.
- Provide facilities for overriding Approval States on the behalf of an Approving entity.
- Verify the identity of each requesting entity attempting to make a request based on the presented e-Tag ID and Security Key, and create the Request as appropriate.
- Generate notification messages to Approval and Agent Services as appropriate.
- Respond to inquiries for transaction information made by Agent or Approval Services.
- Store all e-Tags, to be available for on-line querying and access, for at least ninety (90) days after the stop date/time in the e-Tag.

Information systems designed to provide more than one e-Tagging service (e.g., Authority and Approval Service) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

### 3.2 Registry Usage

The Authority Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. The list of all such entities shall be maintained and available for downloading from the EIR web site. The Authority Service

shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be in a format defined in a document posted on the EIR vendor's web site.

Each BA shall provide the necessary information to identify in the EIR who serves as their Authority Service when that particular BA is referenced as the Sink BA in an e-Tag.

### **3.3 Tag Data Entry and Viewing**

The Authority Service is primarily an automated manager of data that should require little manual intervention. However, certain events may require user interaction. To this end, the Authority Service shall provide a mechanism for a user to view e-Tag requests and **directly modify/override entity Approval States**, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all information (as described in this document) contained in a valid e-Tag.

#### **3.3.1 Approval State Override**

As required above, Approval States may be overridden by the Authority Service Operator. Such overrides must occur within the normal bounds of the state management logic:

- Approval States cannot be overridden for requests that have already reached a final state (i.e., IMPLEMENT, CANCELLED, etc.)
- Overrides must be treated exactly the same as if the approver had set the Approval State (i.e., if a state setting would normally move the Request to a state of IMPLEMENT, then an override to the same state must have the same result).

The ability to override Approval States must only be utilized in the event that the entity whose state is being overridden has requested the Authority Service Operator to do so due to communication or system failure.

#### **3.3.2 Security Keys**

The Authority Service shall be responsible for managing Security Keys associated with e-Tag requests. Security Keys for Agent Services are chosen by the Agent Service itself; all other Security Keys (with the exception of the IDC Security Key described below) are assigned and managed by the Authority Service.

Each Authority Service shall be assigned a unique IDC Security Key to be used when communicating with the IDC. All communications with the IDC must use this IDC Security Key in order to be considered valid. The IDC will reject any messages without a valid IDC Security Key. The IDC e-Tag Key must be considered confidential.

### **3.4 Date and Time Handling**

The Authority Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. E-Tag start and stop times must

be on a minute boundary. The Authority Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Authority Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

The Authority Service must calculate the latest approval time in order to determine when to end the approval period and set the final Request State of an e-Tag. The absolute date/time by which an e-Tag may be approved is calculated based on a combination of the NERC/NAESB timing tables and the application of the start ramp duration defined in the first profile block in the e-Tag and Tag Start Time. If the first energy profile block in the e-Tag does not contain a ramp duration or if the first energy profile block does not start at the Tag Start Time, then default ramp durations should be used. Default ramp durations are defined in NAESB WEQ-004-17. The default ramp durations must be used in conjunction with the NERC/NAESB timing guidelines to determine the absolute time limit for approval in the absence of a ramp duration supplied by the e-Tag Author.

The ramp type for all interchanges between balancing authorities is a straddle ramp. Straddle ramps divide the start ramp duration equally across the profile Block Start Time and divide the end ramp duration equally across the profile block end time. When the e-Tag contains multiple profile blocks, the ramp duration in the profile block's ramp start duration is used to calculate ramp start time and instantaneous MW levels. The ramp end duration is ignored in all profile blocks except for the last profile block where it is used to calculate the ramp end time and instantaneous MW levels. The ramp start time can be determined by dividing the ramp duration by two and subtracting it from the profile Block Start Time. The start time derived from the first profile block is used to determine the point at which the e-Tag transitions from CONFIRMED to IMPLEMENTED. The ramp continues from the ramp start time across the profile Block Start Time to the ramp duration minutes divided by 2 after the profile Block Start Time.

The default ramp duration for reliability adjustments is ten minutes for all interconnections. Ramp rates may be optionally supplied by the entity requesting the profile change. When a reliability adjustment is made, it may result in the creation of additional profile blocks. The ramp durations of the profile blocks will need to be adjusted in this case with the ramp start duration of the adjusted block being set to ten minutes or the supplied start ramp duration and the rest of the ramp start durations (and end duration in the final block if applicable) remaining with their associated profile blocks.

### **3.5 Data Validation**

The Authority Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **3.6 Function Implementation**

The Authority Service is responsible for being able to call the following methods:

- DistributeNewTag

- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributeTerminateTag
- CallbackSummaries
- CallbackTags
- CallbackHistory

And process the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- Query Availability

Semantics, including calling and processing rules are described in detail in the following sections.

The Authority Service is also responsible for Request State Management, as described in section 1.3.4.2 and 1.3.4.3. Passive State settings due to time elapse are also the responsibility of the Authority Service.

### **3.6.1 Initiating a Request**

#### **3.6.1.1 Processing a New e-Tag Request Submission**

The Security Key presented with the Request e-Tag message will be used by the Authority Service for all future messages from/to the e-Tag author for this e-Tag. Authority Service must compare the e-Tag's start time or calculated ramp start time to the timing tables in the NERC/NAESB Standards. The e-Tag is assigned a Time Classification of LATE, ATF, or On-time as per those tables. All request start and stop times must be on a minute boundary. E-Tags submitted after the Tag Stop Time (as determined by the time of receipt at the Authority Service) must be considered to be ATF and designated as such. The corresponding enumeration must be set by the Authority Service and must be persistent, reset only if e-Tag Author makes a correction.

The following validation criteria must be checked when an Authority Service receives a Request e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the Authority Service
- If a Transmission Segment's POR or POD is listed as a DC Tie facility, then the associated BA for that DC Tie must be listed as a SE for that Transmission Service Provider.
- A New e-Tag Request may not create an e-Tag that starts more than 168 hours in the past.
- An ATF e-Tag must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the SE field is missing, the Authority Service must ensure that a BA code that is identical to the Transmission Service Provider code exists. If no BA code identical to the Transmission Service Provider code is found, the Request's delivery state is set to Invalid.

Once an e-Tag Creation request passes validation, the Authority Service must store the e-Tag in its local data store and identify it as a Pending Request. In so doing, it must generate the appropriate "Current Level" profile. The initial Current Level profile must be stored by the Authority Service if In-Kind losses are specified so it may later be used for loss accounting, replaced only when Market Level profile change requests are approved. For each supplied base profile, the *Current* base profiles will be generated. For all transactions and all profiles, the Current Level is equal to the specified Market Level.

The Current Level profile should not be distributed, but rather derived based on all approved Requests associated with a particular e-Tag, processed in order of receipt by the Authority Service.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

The Authority Service must then build the distribution table for the e-Tag. Details follow in the section below. Once the distribution list has been determined, the Authority Service must distribute the e-Tag to the appropriate parties.

### 3.6.1.1.1 Identifying the Distribution List

The Authority Service must determine the distribution list for an e-Tag. The distribution list is comprised of the following entities as listed on the e-Tag:

- The e-Tag Author
- The Generation Providing Entity (Merchant)
- The Load Serving Entity
- All Purchasing Selling Entities (Title Holders) in the Financial Path
- All Transmission Customers
- The Balancing Authority in which the generation is located (Source BA)
- The Balancing Authority in which the load is located (Sink BA)
- All Transmission Service Providers
- All Scheduling Entities for those Transmission Service Providers
- All Reliability Coordinators listed in the Electric Industry Registry as being associated with the Source BA, Sink BA, and intermediate BAs.
- All entities contained in the CC list.

In order to determine a Service URL for the above entities, the following rules must be used:

- For GPEs, LSEs, and Transmission Customers, there will be potentially two entries. The first Service URL will be the entity's registered URL for their Agent Service. The second Service URL will be the entity's registered URL for their Approval Service.
- For intermediate PSEs, the Service URL will be the entity's registered URL for their Agent Service.
- For all other entities, the Service URL will be the entity's registered URL for their Approval Service.
- For the GPE, LSE, and Transmission Customer, approval rights may be held, delegated, or waived. When holding rights, the Service URL is based on the registered approval URL for that entity. When delegating rights, the Service URL is based on the approval URL of the alternate entity specified for the specific source/sink in the e-Tag; this delegation always supersedes that specified as the registered approval URL for the GPE/LSE/TC. If the delegated entity is not already in the distribution list, the entity must be added. When waiving rights, the entity will have explicitly not listed an approval service in their registration or that of the source/sink.
- Entities identified in the CC list must not be given approval rights though the e-Tag may be distributed to the entities registered URL for their Approval Service as described in section one of this document.

In addition, the messages, including callbacks, must be sent to the Secondary Service URL registered to any PSE, BA, or Transmission Service Provider in the distribution list. This does not apply to any URL that matches a Service URL. These forwarded messages shall not impact the Delivery State of the associated entity.

No duplicate entities may be in the distribution list. A duplicate is defined as entities sharing the same Tagging Entity ID, Service Type (i.e., Agent, Approval, or Authority), and Service URL. Any entity that does not have a registered Service URL shall be removed from the distribution list, and any approval rights waived. Each entity will have a record in the list, identifying their Service URL for the transaction. A record in the list should have the following general format:

TAG ID	REQUEST ID	TAGGING ENTITY ID	SERVICE TYPE	SERVICE URL
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### **3.6.1.2 Processing a Correction Request Submission**

The following validation criteria must be checked when an Authority Service receives a Request Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security key presented must be identical to the key presented to the Authority Service at the time the e-Tag was originally submitted by the Agent Service.
- Only the e-Tag Author or Transmission Service Provider may issue a correction
- Corrections are only allowed for e-Tags that are in a PENDING state.
- Only certain items may be corrected on an e-Tag. Specifically, the following are NOT allowed:
  - Addition or removal of any entity from the transaction path (both financial and physical)
  - Changes to the energy profile (changes to the transmission allocations are acceptable)
  - Reassignment of a Transmission Allocation to a new physical segment
  - Addition or Removal of any Scheduling Entity
- Transmission Service Provider authored corrections may only change the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider. The total transmission allocation MWlevel may not be changed (increased or decreased) for any period. Extensions are prohibited.

Once a Correction Request passes validation, the Authority Service must recompute ActOnByTime and TimeClassification using the correction's submission time in place of the e-Tag submission time and following the rules from the NERC/NAESB Standards timing tables. For Transmission Service Provider authored Correction Requests, since no approval process is required, the Authority Service must assign the same values active for the e-Tag for the ActOnByTime and TimeClassification. The Authority Service must then assign an incremental unique number to the correction, and each item being corrected must be updated to reflect this number. The first correction must be considered correction ID one (1). The response must contain references to the versions of the corrected segments.

The Authority Service must REPLACE the data in its current store with the new correction data. Any entity impacted by the correction (as defined in Section 1.6.2) must have their Approval State reset to PENDING and be informed of the change through Correction Request Distribution.

### **3.6.1.3 Processing a Profile Change Request Submission**

The following validation criteria must be checked when an Authority Service receives a Request Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- Profile Change Requests are only allowed for e-Tags that have been CONFIRMED or IMPLEMENTED
- Profile Change Requests may only change hours that are at the EARLIEST one (1) hour in the past. Dynamic tags are an exception to this rule (they may be changed up to 168 hours in the past).
- Profile change requests may not be made to extend an e-Tag once the e-Tag's profile has been completed (i.e., current time is equal to or later than the last date/time specified in the e-Tag).
- Reliability Limits may be set and cleared for any duration.
- Only certain entities may change certain profile values.
- Reliability Limits may specify the applicable BaseProfileID. The default location of the limit is at the Source BA (formerly referred to as GCA) (BaseProfileID 1).
- Profile change requests, including DYNAMIC type e-Tag ATF adjustments, made by the e-Tag author will use the source profile for loss calculations and will replace the profile stored on the Authority Service for use in loss calculations once the Request has reached a CONFIRMED or IMPLEMENTED state.
- Reliability Limits and Transmission Allocation may not be changed for DYNAMIC e-Tags more than one hour in the past (but may be cleared).
- All applicable validations required in NERC INT-007-1 must be performed.
- Transmission Service Provider Market Profile changes may only impact the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider.
- Transmission Service Provider Market Profile changes may not reduce or increase the total transmission allocation MWlevel for any period. Extension is prohibited.
- Transmission Service Provider Market Profile changes cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

- Profile change requests may not add or remove any entity.

Upon receipt, the Authority sets the ActOnByTime and TimeClassification based on the time of receipt and the timing table in the NERC/NAESB Interchange Standards. Transmission Service Provider Market Profile changes to the Product Code or Transmission Allocation requires no approval process therefore ActOnByTime should be set to the time of receipt and TimeClassification should be set to On-time.

If the Request changes the reliability limit, then the Authority Service must calculate the correct MW values to use for all profiles except for the source profile (which is included in the Profile Change message). The source profile will be associated with a physical location (BaseProfileID). If no physical location is included in the Profile Change message then the Authority Service will default the location to the Source BA (formerly referred to as GCA). The value of each profile calculated below must use the location information to calculate the correct profile values for both upstream and downstream profiles. The value of the profile at the physical segment specified in the Profile Change message will be the same as the source profile. The process for calculating upstream and downstream profiles is done in three steps:

#### Loss Percentage Step

The first step is to calculate the Loss percentage supplied by the creator of the original e-Tag based on the current Market Level. This is done by applying the specified formula, for the day the curtailment is effective.

$$LossPercentage = \frac{TotalDailyMWhPOR - TotalDailyMWhPOD}{TotalDailyMWhPOR}$$

#### Carry Forward Step

To minimize overpayments or underpayments when calculating the POD Megawatt profile under a curtailment a CarryForward concept is used to ensure that the delivering party is not over-charged with losses for the transaction. The starting value of CarryForward will always be zero. Afterwards, the CarryForward value must be re-calculated each hour or part of an hour for which a new curtailment has been applied to the profile.

$$CarryForward_N = 0$$

#### New Limit Step

$$NewLimit_N = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage)$$

After the first calculation of the NewLimit, a CarryForward will exist and should be calculated as:

$$CarryForward_{N+1} = RoundUP(SpecifiedLimit * LossPercentage) - (SpecifiedLimit * LossPercentage)$$

Afterwards, curtailment should use the CarryForward value to calculate the new limit as:

$$NewLimit_{N+1} = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage - CarryForward_{N+1})$$

Example:

Daily MWh POR = 100 MW

Daily MWh POD = 97 MW

SpecifiedLimit (Curtailed to) = 50 MW

$$LossPercentage = \left( \frac{100 - 97}{100} \right) = 0.03$$

$$CarryForward_{N0} = 0$$

$$NewLimit_{N0} = 50 - RoundUp(50 * 0.03) = 50 - 2 = 48$$

$$CarryForward_{N+1} = RoundUp(50 * 0.03) - (50 * 0.03) = 2 - 1.5 = 0.5$$

Second Curtailment occurs to 40 MW

$NewLimit_{N+1} = 40 - RoundUp(40 * 0.03 - 0.5) = 40 - RoundUp(.7) = 39$  If a Reliability Limit clearing is applied, then reliability limits for all periods following the start of the clearing through the end of the clearing are set to null and the limits erased.

Once the downstream reliability profiles have been created, the Authority Service must generate the appropriate Current Level exception profiles. The exception profiles must only reflect the hours changed, NOT the entire transaction. The current *exception* profile will always be generated based on the following rules:

**For PSE-Originating Market Changes:**

*For each supplied Exception Profile*

- The Exception Current Level is set to the lesser of the effective Reliability Limit for the profile and the Exception Market Level. Effective Reliability Limit is defined as the current Exception Reliability Limit if one exists; if none exists, then the Reliability Limit is assumed to be infinite.

**For Source BA/Transmission Service Provider/Sink BA-Originating Reliability Changes:**

*For Generation Profiles:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the specified Exception Reliability Limit. Effective Market Level is defined as the current

Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level.

*For each POR, POD, and Load Profile:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the previously calculated Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level Exception

For any Exception Profile where the Current Level is equal to the Base Current Level, the Exception Profile must be eliminated. This is intended to reduce redundant data exchange.

### **Additional Implementation Details**

It is possible for an e-Tag Author or Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules must be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. In so doing, a new reservation allocation and new Base Profile will be added. The reservation allocation will NOT be added as an exception allocation, as no previous base exists to be modified.
- Should an e-Tag Author need to modify an allocation, the changes must be specified in the same manner in which profile change or extension would be processed. For example, if a request was made to have a transaction for an additional hour, and the requestor desired to use the same reservation that was used for the previous hour, an allocation exception would be inserted that specified the additional hour.
- Transmission Service Providers may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- Transmission Service Provider transmission allocation adjustments cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

Following this modification of the allocation the ChangeRequest is distributed to all appropriate parties.

### 3.6.2 Request Distribution

The following procedure should be used when sending Request Distribution messages:

- Encode the new Request in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the intended recipient of the distribution message
- If the submission fails or the response contains fault messages, attempt to resend the message using the process described in section 7.1.1.1.
- Set the delivery status to an appropriate value indicating whether or not the message was successfully delivered to the intended recipient. Appropriate values are DELIVERED (no errors), COMMFAIL (couldn't contact the message recipient) and INVALID (an error was returned by the message recipient)

#### Identifying the Entities with Approval Rights

Some of the entities in the Distribution List will have Approval Rights over the various requests, while others will have only viewing rights. The rules for determining who has Approval Rights to each Request are defined in Section 1.6.2.1 of this document.

The Authority Service will need to maintain a RequestApprovalRights list for each e-Tag. This list will be used in generating the appropriately formatted distribution messages for delivery to the various distribution entities. The list will also be used to store local State information about each entity. Each entity will have a record in the list, defining their Delivery State, Approval State, and State Type. Initial delivery state (before delivery has been attempted) should be set to PENDING. A record in the list should have the following general format:

TAG ID	REQUEST ID	ENTITY CODE	DELIVERY URL	DELIVERY STATE	APPROVAL STATE	STATE TYPE
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Each Request requiring Approvals (New e-Tag Request, Profile Change Request) must have a data set of this type associated with it. Entities with Approval rights will have their Delivery State set to QUEUED, their Approval State set to PENDING, and their State Type set to NA.

Entities without Approval Rights will have their Delivery State set to QUEUED, their Approval State set to NA, and their State Type set to NA.

An entity authoring a Request will be assumed to have implicitly approved that Request and as such, will have their Delivery State set to QUEUED, their Approval State set to APPROVED, and their State Type set to ACTIVE. The entity will, however, retain rights to set their Approval Status (i.e., if they wish to deny their own Request, they may do so).

Entities with Approval Rights on a Request are specifically instructed to take action on the e-Tag through the use of the ApprovalRights flag.

### **3.6.2.1            *Distributing a New e-Tag Request***

Distribution of a New e-Tag Request is handled as described in Section 3.6.2.

### **3.6.2.2            *Distributing a Correction Request***

Distribution of a Correction Request is handled as described in Section 3.6.2.

For entities impacted by the Request, the Authority Service must set the IMPACT flag to TRUE. For entities not impacted by the correction, the IMPACT flag must be set to FALSE.

### **3.6.2.3            *Distributing a Profile Change Request***

All distributions must include the market levels or reliability limit profiles for that period. Distribution of a Profile Change Request is handled as described in Section 3.6.2. If a Reliability Limit clearing is being requested, then that limit clearing must be distributed to all entities.

## **3.6.3 Request Actions**

### **3.6.3.1            *Processing Request Approvals and Denials***

The following validation criteria must be checked when an Authority Service receives a Request Approval or Denial message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag Id presented must represent an e-Tag currently held by the Authority Service
- The Request ID presented must represent a Request currently held by the Authority Service
- The Security Key presented must be identical to the key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The entity attempting to set State must be one of the entities having approval rights over the Request.
- An Author of the State Setting must be specified
- State Settings are only allowed for Requests that are not in a final state.
- State Settings of DENIED or STUDY must be accompanied by reasons that explain why the specific state was chosen

Once a Request Approval message passes validation, the Authority Service must store the State in its local data store and use it to identify when the Request's Approval State should be updated. The State Type must be marked as ACTIVE. If a denial or study, the State information must be distributed to all parties.

In certain cases, the Authority Service Operator may be obligated to override a State request on the behalf of another entity. Should this situation occur, the new State must be recorded and the State Type set to "OVERRIDE."

### **3.6.3.2            *Processing a Withdraw Request***

The following validation criteria must be checked when an Authority Service receives a Withdraw Request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service
- The Request ID presented must represent a Request currently held by the Authority Service
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The entity attempting to Withdraw must be the Author of the Request.
- A Withdrawal is only allowed for a Request that is PENDING
- Withdraw Requests may be submitted for ATF Requests that have a Request State of PENDING

If the Request State of the Request is PENDING, then the Authority Service must set the Request State of the Request to WITHDRAWN and distribute a DistributeStatus message as required in section 3.6.4.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

WITHDRAWN is a final state.

### **3.6.3.3            *Processing a Terminate Request***

The following validation criteria must be checked when an Authority Service receives a RequestTerminateTag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service

- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- RequestTerminateTag requests are only allowed for e-Tags that are CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag request must contain a termination time that is between the Tag Start Time and Tag Stop Time, and later than the time of receipt.
- A RequestTerminateTag request is invalid if it requests a start time that is later than or equal to an existing RequestTerminateTag Request for the same e-Tag; however, a request for an earlier termination time is allowable.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with Block Stop Time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, must be set to a Request State of DENIED.

The Authority Service must distribute a DistributeTerminate message as defined in 3.6.1.1.1. The Request is subject to the same approvals as a new adjustment request. The Authority Service sets the ActOnByTime based on the receipt time of the message and the NERC/NAESB Interchange Standard timing tables. This will also include calculation of ramp start time. The Authority Service also sets the TimeClassification based on the NERC/NAESB Interchange Standard timing tables and the termination time. If the Request State becomes APPROVED, the Authority Service's action depends on the termination time.

- If the termination time is equal to the Tag Start Time of the e-Tag, then the Authority Service must distribute a DistributeResolution message that sets the Composite State of the e-Tag to CANCELLED.
- If the termination time is after the Tag Start Time of the e-Tag, then the Authority Service must set the market level profiles and transmission allocation profiles of the e-Tag to zero starting at the termination time, and distribute a DistributeResolution message that includes the time at which the Authority, Approval, and Agent Services will set the e-Tag's Composite Status to TERMINATED. This is called the TerminationTime.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

CANCELLED and TERMINATED are final states.

### 3.6.4 Information Distribution

Whenever a significant status event occurs as defined below, or a Request Resolution occurs, the Authority Service must notify all parties on the distribution list of the e-Tag regarding the change. This notification aids in coordination and communication between the various entities involved with the transaction. These notifications follow the same procedure used by the other Request Distribution messages, described in section 3.6.2.

#### 3.6.4.1 *Distribution of Request Approval State*

A significant status event (an event triggering a State Distribution) is defined as one of the following:

- An Approver sets their State to DENIED, STUDY or APPROVED
- The Authority Service sets a Delivery state to INVALID or COMMFAIL

The distribution must contain the State of ALL entities with approval or viewing rights over the Request.

When a distribution is triggered, the Authority Service must wait five (5) seconds to verify no other changes are made to the States associated with the Request. If such changes are made, the distribution must be updated to include those changes. If the Denial or Study is overridden to APPROVED, the distribution must be aborted.

Distribution of a Request Approval State is handled as described in Section 3.6.4.

#### 3.6.4.2 *Distribution of Request Resolution*

The events triggering a Request Resolution Distribution are as follows:

- All Approvers have set their State to Approved, or
- The time for approval of the Request expires, or
- A requester withdraws the Request.

Given the above events, the following rules apply to determining the resolution of the Request:

- If a requester has withdrawn the Request, the Request is WITHDRAWN.
- If all approvers have set their State to Approved, the Request is APPROVED and the Composite State is CONFIRMED.
- If time has expired and any Approver's current State is DENIED, the Request is DENIED.
- If time has expired, and no Approver's current State is DENIED, and all Reliability Entity's current State is APPROVED, the Request is APPROVED.
- The individual status of any Market Entity whose current State is PENDING will be set to APPROVED and the Type will be set to PASSIVE when the Request State of the Request is APPROVED.
- If time has expired, and any Reliability Entity's current State is EXPIRED (or PENDING), the Request is EXPIRED.

When the Authority Service distributes a Request Resolution for a New e-Tag Request where the Composite State of the e-Tag is transitioning to CONFIRMED, the Authority Service must calculate and distribute the "ImplementTime" so that all Agent and Approval Services know when the Authority Service is planning to make the transition from CONFIRMED to IMPLEMENTED.

Distribution of a Request Resolution is handled as described in Section 3.6.4.

### **3.6.4.3 Potential TLR Profile Change Distributions**

The Authority Service has no requirements with regard to the warning message titled Distribution of Potential TLR Profile Changes.

## **3.6.5 Recovery Functions**

### **3.6.5.1 Processing Synchronous Queries**

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to process all synchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation return the requested data. Otherwise return a fault or error message

#### **3.6.5.1.1 Processing an e-Tag Query**

The following validation criteria must be checked when an Authority Service receives a Query e-Tag message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated.

#### **3.6.5.1.2 Processing a Request Ids Query**

The following validation criteria must be checked when an Authority Service receives a Query Request Ids message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service

- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Request IDs Query message passes validation, the Authority Service should return the requested data ordered by Request State and then by Request creation time (oldest to most recent).

#### **3.6.5.1.3 Processing a Request Query**

The following validation criteria must be checked when an Authority Service receives a Query Request message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### **3.6.5.1.4 Processing a Request State Query**

The following validation criteria must be checked when an Authority Service receives a Query Request State message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### **3.6.5.1.5 Processing Queries for System Availability**

Authority Services should respond back to Queries for System Availability as follows:

- If the Authority Service is operating correctly, the Return Value should be SUCCESS.

- If the Authority Service is not operating correctly, the Return Value should be FAIL.
- If a known error Service is occurring, the Authority Service should indicate that error.

### **3.6.5.2 Processing Asynchronous Queries**

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to process all asynchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation, queue the Request for further processing and return a success response, otherwise return a fail response.
- Periodically read and process all queued queries. For each query, send a new (callback) message to the registered URL of the party that submitted the query. The callback message should contain the data that was requested by the previous Query message.
- If the callback message fails or encounters a fault response, attempt to resend the message using the process described in section 7.1.1.1.

Asynchronous responses must start within five minutes of query receipt.

#### **3.6.5.2.1 Processing e-Tag Summary Queries**

The following validation criteria must be checked when an Authority Service receives a Query e-Tag Summary message:

- The Range specified for the query must not exceed twenty-five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 25 hours of information.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once an e-Tag Summary Query message passes validation, the Authority Service should return the requested data ordered from oldest to most recent based on the users search criteria (Date Active or Date Modified). The Security Key used for the callback message should be the same Security Key that was used when the e-Tag Summary Query message was submitted.

When an approval or agent service requests recovery over an outage range, the service must create a list of unique URLs for Authority Services and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority

Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority Service's companies is listed as the intended message recipient.

#### **3.6.5.2.2 Processing an e-Tags Query**

The following validation criteria must be checked when an Authority Service receives a Query e-Tags message:

- The e-Tag Ids presented must be held by the Authority Service
- The e-Tag Keys associated with those e-Tag Ids must be valid keys associated with those e-Tags and with the querying entity
- The Return Rate must be greater than zero (0)
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Query e-Tags message passes validation, the Authority Service should return the requested data ordered by e-Tag creation time from oldest to most recent. Each callback message should contain one or more e-Tags, but not more than the number of e-Tags specified in the Return Rate field of the Query e-Tags message. Each message may contain fewer than the requested number of e-Tags. The Security Key used for the callback message should be the same Security Key that was used when the e-Tag Summary Query message was submitted.

#### **3.6.5.2.3 Processing an e-Tag History Query**

The following validation criteria must be checked when an Authority Service receives a Query e-Tag History message:

- The TagID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the queried e-Tag. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Authority Service should return all data to the caller, regardless of the message delivery status, except for retry messages (which should never be returned).

Once a Query e-Tags message passes validation, the Authority Service should return the requested data ordered by Call Time Stamp (oldest to most recent).

### **3.7 Availability and Performance**

The Authority Service must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, the Authority service must provide, at a minimum, the following:

- Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);
- Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);
- Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc.).

Providers of Authority Services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.

## **Section 4 - Approval Service Functional Requirements**

### **4.1 Introduction**

All entities that may have “approval rights” over any Interchange Transaction shall provide the necessary hardware and software systems to implement the Approval Service. The Approval Service shall comply with all functional requirements set forth in this section. Approval entities may elect to comply with these Approval Service requirements using internally developed hardware/software; third party developed hardware/software, or third party subscription type services.

Approval shall be responsible for providing the following functions:

- Accept input e-Tag data transferred in compliance with this document from any Authority Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly (i.e., provide for positive acknowledgement of receipt of the e-Tag).
- Communicate approval, denial, study, and adjustment information to the Authority Service managing the e-Tag in compliance with this document.
- Receive notification messages from the Authority Service.
- Query the appropriate Authority Service for the current State of each Request submitted for approval.

Information systems designed to provide multiple e-Tagging services (e.g., Authority and Approval Services), are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging related services provided by (or for) others.

### **4.2 Registry Usage**

The Approval shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers, BAs, and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A listing of all such entities shall be maintained and available for downloading from the EIR web site. The Approval Service shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be maintained in a format defined by the NERC/NAESB Joint Electric Scheduling Subcommittee.

The Approval Service must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

### **4.3 Tag Data Entry and Viewing**

The Approval Service is the main interface through which entities with approval rights to an e-Tag alert the e-Tag author and each other of their decisions to approve, deny, or change an e-Tag to reflect a valid representation of a scheduled transaction. To this end,

the Approval Service shall provide a mechanism for a user to view, make changes, or modify the entity state(s), as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all transaction related information (as described in the Data Model) necessary to represent a complete, valid e-Tag.

#### **4.4 Date and Time Handling**

The Approval Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. The Approval user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Approval Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

#### **4.5 Data Validation**

The Approval Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

#### **4.6 Function Implementation**

The Approval Service is responsible for being able to call the following methods:

- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeTerminateTag
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- CallbackSummaries
- CallbackTags
- CallbackHistory

- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

#### **4.6.1 Initiating a Request**

The Approval Service may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

##### **4.6.1.1 Submitting a Correction Request**

Write Request – Transmission Service Providers may submit e-Tag correction(s) if needed. The Transmission Service Provider must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to a TransProductRef must not only contain the TransProductRef, but also the Transmission Allocation ID, a reference to the Parent Segment, the OASIS Number, and the associated Transmission Customer.

The Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider (TPCode). The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation may not be changed (either reduced or increased)

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may only be made to e-Tags that are PENDING
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the Transmission Service Provider must be informed of the error(s) by the Approval Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Approval Service must record these numbers for later reference and integrity verification.

#### **4.6.1.2            Submitting a Profile Change Request**

When requesting a setting of the reliability limit, the Approver may specify the profile at a specific physical segment. If the Approver does not specify a physical segment the default is the generator. The Authority Service will calculate the remaining profiles for all other upstream and downstream profiles. The Approver must provide any additional parameters necessary to successfully call the RequestProfileChange method. If requesting a clearing of reliability limits, the Approver must specify a start and a stop range for the clearing of the limit. Approval Services are not allowed to submit Current Level profiles, as they are calculated by the Authority Service.

The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...).

In some cases the Market Operators may specify Market Level Profile changes rather than Reliability Limit Profile Changes. Specifying a Market Level Profile Change is completely acceptable provided the entity is a registered Market Operator and the Profile Change Request would modify a transaction that sources or sinks in the Market Operator's Balancing Area(s). Such use of the Market Level profile must ONLY be used by the Market Operator when market conditions are setting the flow of the transaction; reliability concerns must still be handled through the use of the Reliability limit. Market Operators must provide full sets of profile changes (i.e., not only the profile at the Generator, but all profiles along the scheduling path as well).

In the case of DYNAMIC e-Tags, the Sink BA or Source BA may specify limit clearing and Market Level Profile changes. This is intended to allow the Sink or Source BA to set the energy level of the e-Tag to the metered (actual) interchange value. This type of modification is allowed ONLY for historic data up to 168 hours in the past. When any entity changes a market level, they must also supply all of the profiles in the e-Tag. Changes to the reliability limit, with the exception of limit clearing, must not be allowed for DYNAMIC e-Tags if they are for a period more than one hour in the past.

The Transmission Service Provider may also submit a Market Level Profile change and is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider. The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) nor the earliest start and end times.

The following validation criteria must be checked when an Approval Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may only be made to e-Tags with Composite States of CONFIRMED or IMPLEMENTED
- Profile Changes are not allowed for ATF e-Tags (they may be terminated)
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Profile change requests may not add or remove any entity.

It is possible for a Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should the Transmission Service Provider need to modify a transmission allocation then the Transmission Service Provider must specify the change in the same manner in which profile change would be performed.
- The Transmission Service Provider may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- The adjustment cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

#### **4.6.2 Request Distribution**

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

#### **4.6.2.1 Processing a New e-Tag Request Distribution**

Verify Semantics – the following rules must be met in order to constitute a valid New e-Tag Request Distribution:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- A e-Tag with the ID presented must not already exist on the Approval Service
- An e-Tag designated as ATF must be clearly identifiable. The Approval Service user interface must be designed so that ATF e-Tags are differentiated/highlighted by color, text, or some other mechanism that ensures the e-Tag Approver is aware that the e-Tag is ATF.

#### **4.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tag creation Requests that do not have an Approval State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Approval Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the e-Tag Approver that the correction has occurred, highlighting the correction for their inspection
- Immediately consider any previous approval action (setting the approval State of the affected entity to either APPROVED, DENIED, or STUDY) to be reset

#### **4.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

### **4.6.3 Request Actions**

The following procedure should be used by Approval Services when taking actions on requests:

- Encode the message in a valid XML format (as described by the latest e-Tag schema).

- Look up (in the EIR) the Authority URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### **4.6.3.1      *Approving and Denying Request***

The e-Tag Approver must indicate their decision to support or refute the Request. Valid Approval States are defined in Section 1.3.4.2. States of Denied and Study **MUST** be accompanied with reasons for the choice. States of Approved **MAY** be accompanied with reasons or comments. The Approver must specify the Request ID that is being acted upon, and must include their assigned Security Key in order for the SetState method call to be processed correctly.

The following validation criteria must be checked when an Approval Service sends a Set Approval State message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The SetState call may not reference any Request that has already been resolved (i.e. has a current final state).
- States of Denied and Study must be accompanied by a reason

#### **4.6.3.2      *Withdrawing a Request***

Approval Services may withdraw profile change requests.

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority Service at the time the request was made.
  - The original Security Key for the transaction that was used in the e-Tag Creation message.
- Withdraw messages must not be sent for requests that have already reached a final state (APPROVED, etc.).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- WITHDRAWN is a final states for the Request.

## 4.6.4 Approval Service Information Distribution

### 4.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Status message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service initially transferred the New e-Tag Request to the Approval Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service transferred the New e-Tag Request to the Approval Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.4.3 *Potential TLR Profile Change Distributions*

The Approval has no requirements with regard to the Distribution of Potential TLR Profile Changes.

## 4.6.5 Recovery Functions

### 4.6.5.1 *Synchronous Queries*

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).

- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### **4.6.5.1.1 Query for an e-Tag**

Tag approval service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request.

#### **4.6.5.1.2 Query for Request Ids**

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request. Optionally, the user may elect to filter RequestID's based on the resolution of the requests associated with the e-Tag (i.e., show only Activates Requests).

#### **4.6.5.1.3 Query for a Request**

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID they wish to retrieve.

#### **4.6.5.1.4 Query for a Request's State**

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID for which they would like State information.

#### **4.6.5.1.5 Query for System Availability**

Approval Service must specify a particular system for which to query availability (by entity desk and service type (Agent, Approval, Authority, and RA Services)).

#### **4.6.5.1.6 Processing Queries for System Availability**

Approval Services should respond back to Queries for System Availability as follows:

- If the Approval Service is operating correctly, the Return Value should be SUCCESS.
- If the Approval Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Approval Service should indicate that error.

### **4.6.5.2 Asynchronous Queries**

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag, or, for Query Summaries, identify a unique list (select distinct) of Authority Service URLs. Send the XML message(s) created during the first step to this/these URL(s) as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message(s) from the Authority Service. The response message(s) will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Approval Service's registered service URL, and will include the same Security Key used by the Agent Service to submit the query. The Agent should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 4.6.5.2.1 Query Summaries

The Approval Service must specify either an Active Range or a Last Modified Range for which they want e-Tag summaries to be returned. The Active Range is used to specify a range of time during which an e-Tag must have been active (i.e., either the first start date/time pair or the last stop date/time pair of the e-Tag is within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When either an Approval or Agent Service requests recovery over an outage range, the requesting service must create a list of unique Authority Services URLs and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority Service's companies is listed as the intended message recipient.

The User must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Approval Service submits a Query Summaries message:

- The rules described in the Data Model and Method Descriptions sections must not be violated

- The Range specified must not exceed twenty-five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 25 hours of information.

The following validation criteria must be checked when an Approval Service receives a Query Summaries Callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the Approval Service transferred the Summaries Query to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 4.6.5.2.2 Query e-Tags

The Agent Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing Security Keys can be recovered using the Query Summaries message. The User must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### 4.6.5.2.3 Query History

The Approval Service must specify a valid e-Tag ID and Security Key. The Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the Security Key provided by the Authority Service through a Distribute message. Missing Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Approval Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## **4.7 Availability and Performance**

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## **Section 5 - Reliability Authority Service Functional Requirements**

### **5.1 Introduction**

RA Services are used by Reliability Coordinators (RCs) to identify transactions for curtailment, reallocation, and reloading. Functions of a RA Service with regard to Reliability Authority and operations are determined by the NERC IDC Working Group or other industry groups. The information below describes the role of a RA Service with regard to the e-Tag system.

### **5.2 Registry Usage**

RA Services shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers, BAs, and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A list of all such entities shall be maintained and available for downloading from the EIR web site. RA Services shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be maintained in a format defined by the NERC/NAESB JESS.

RA Services must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

### **5.3 e-Tag Data Entry and Viewing**

User Interface rules for RA Services are defined by the NERC IDC Working Group or other industry groups.

### **5.4 Date and Time Handling**

RA Services shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. RA Services' user interfaces are free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the RA Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### **5.5 Data Validation**

RA Services shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **5.6 Function Implementation**

The RA Service is responsible for being able to call the following methods:

- RequestProfileChange
- SetState
- DistributePotentialTLRProfileChange

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeResolution

Semantics, including calling and processing rules are described in detail in the following sections.

### 5.6.1 Initiating a Request

RA Services may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 5.6.1.1 *Submitting a Profile Change Request*

The following validation criteria must be checked when a RA Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may **only** be made to e-Tags that have been CONFIRMED or IMPLEMENTED
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags, which must not affect points in time more than 168 hours in the past.

### 5.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

#### 5.6.2.1 *Processing a New e-Tag Request Distribution*

The following validation criteria must be checked when a RA Service receives a Distribute New e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the RA Service

### **5.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when a RA Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that do not have a Composite State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

### **5.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when a RA Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

## **5.6.3 Information Distribution**

### **5.6.3.1 Processing of a Request Resolution Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the RA Service
- The Security Key presented must be identical to the NERC-assigned Security Key for RA Service communications.
- The rules described in the Data Model and Method Descriptions sections must not be violated

### **5.6.3.2 Distribution of a Potential TLR Profile Change**

*Note – The following actions describe the role of the NERC Interchange Distribution Calculator (IDC) with regard to the generation of curtailment prescriptions. While other RA Services may choose to implement this feature, it is not strictly required.*

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Agent Service URL associated with the PSE listed as the e-Tag author for the e-Tag impacted by the Potential TLR profile change

Agent Services may implement a callback mechanism to verify validity of the distribution, but are not required to do so.

The following validation criteria must be checked when a RA Service receives a Potential TLR Profile Change callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the RA Service transferred the Potential TLR Profile Change to the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

## ***5.7 Availability and Performance***

Availability and Performance Requirements for the RA Services are defined by the NERC IDC Working Group or other industry groups.

## Section 6 - Data Model Overview

### 6.1 Tag Data

#### 6.1.1 Transaction Types

E-Tag recognizes the following transaction types:

**Normal:** These are the “normal energy schedules” and should be the largest number of schedules. They will include schedules that use point-to-point, network integrated transmission service, or grand-fathered service under a regional tariff. These schedules are included in the IDC and are subject to TLR curtailment.

**Dynamic:** A dynamic schedule is scheduled using an expected value but the actual energy transfer is determined in real time by separate communications external to the e-Tag system. Also included in this type will be regulation energy schedules and energy imbalance schedules. The e-Tag should contain the expected average energy in the energy profile and contain the maximum expected energy in the transmission allocation. Dynamic e-Tags may be adjusted by the source BA, sink BA, or e-Tag author up to 168 hours in the past using a market adjust to set the actual interchange value.

**Emergency:** Emergency Schedules, including reserve sharing, Spinning Reserve, and Supplemental Reserve may be scheduled as Emergency Schedule Type. Another kind of emergency schedules is execution of an operating guide that implements schedules in response to a loading problem. For example, an RTO based emergency re-dispatch that lasts longer than an hour involving multiple Balancing Authorities. Typically, EMERGENCY schedules would not require reservations before being used where Capacity Benefit Margin had been calculated to allow for this reserve sharing.

**Loss Supply:** Used for customers self-supply losses. This type is used to differentiate between a loss schedule and a normal schedule. Some tariffs presently require that schedules for losses require different treatment than schedules for the associated energy.

**Capacity:** Typically used for entities to import operating reserves from outside their reserve-sharing group but may also be used to arrange for purchases or sales of Spinning Reserve and Supplemental Reserve between other entities. This type of e-Tag may be activated upon contingency with zero ramp durations.

**Pseudo-Tie:** A dynamic transfer implemented as a pseudo-tie rather than a dynamic schedule. Used in the same way as a Dynamic e-Tag. These tags may be adjusted in the same manner as Dynamic transaction type e-Tags.

#### 6.1.2 Market Segments

Market Segments represent those portions of the path that are associated with the tracking of title and responsibility. A Physical Segment is always associated with a parent Market Segment. However, the opposite is not true; Market Segments can exist independent of Physical Segments.

Market Segments contain information that describes the market information, such as the identity of the market participant, the firmness of energy the market participant is delivering, and the physical segments the entity is responsible for providing. Market Segments must be listed in order from GPE to LSE and numerically identified as such (e.g., GPE segment = 1, Intermediate PSE segment =2, LSE segment = 3).

GPE and LSE segments must contain an energy product. Market Segments may only utilize products in the Electric Industry Registry related to Generation or Load.

### **6.1.2.1 Scheduling Responsibilities**

Market Segments can describe a responsibility for managing the scheduling for a portion of the transaction. This is seen when a marketer has rights to a resource and wishes to exercise those rights (i.e., a generation merchant wishes to generate energy for sale, a load serving entity wishes to consume energy based on a purchase, or a marketer wishes to physically move energy from one area to another). When this occurs, the market segment will contain the physical segments over which the marketer has scope.

### **6.1.2.2 Title Transfers**

Market Segments can also describe non-physical title transfers. These are seen when a market participant takes financial possession for the energy commodity, but does not physically move that energy before transferring possession to another financially responsible party. When this occurs, the market segment will not contain any physical segments.

### **6.1.3 Physical Segments**

Physical Segments represent those portions of the path that are physical in nature and represent a movement of energy. There are three types of physical segment: Generation, Transmission and Load. Physical segments must be listed in order from generation to Load and numerically identified as such (i.e., Generator segment = 1, first Transmission Service Provider segment = 2, second Transmission Service Provider segment = 3, Load segment = 4). Generation segments must always be listed first, while Load segments must be listed last. E-Tags may only have one Generation segment and one Load segment. All physical segments must reference a parent market segment, identifying the market entity responsible for the physical segment. These references must also be in an order that matches that described by the market segments. For example, the following represents a valid description of a transaction:

GPE: Market Segment 1

PSE: Market Segment 2

LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1

Transmission: Physical Segment 2, Parent Market Segment Ref 2

Load: Physical Segment 3, Parent Market Segment Ref 3

In this example, the chain of ownership and physical path are aligned properly. When combined, the results identify a clear tracking of title and scheduling path:

GPE: Generator

PSE: Transmission

LSE: Load

However, the following example is invalid:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 3  
Load: Physical Segment 3, Parent Market Segment Ref 2

In this example, the references indicate a paradox: when combined, invalid results are produced:

GPE: Generator  
PSE: Load ←out of sequence  
LSE: Transmission ←out of sequence

Such cross references are invalid.

### **6.1.3.1 Generation**

Generation Segments contain information that describes a generation resource, such as the location of the generation, the firmness of the energy supplied by the resource, and contract references that identify the resource commitment. Generation Segments may only utilize products in the Electric Industry Registry related to Generation.

### **6.1.3.2 Transmission**

Transmission Segments contain identification that describes a transmission service, such as the identity of the provider, the POR and POD of the service, the firmness of the service, simple loss information, and contract references that identify the service commitment. Transmission Segments may only utilize products in the Electric Industry Registry related to Transmission.

#### **6.1.3.2.1 Scheduling Entities**

Scheduling Entities must be registered as Balancing Authorities in the Electric Industry Registry. Many Transmission Service Providers require that e-Tags illustrate not only the contractual relationship between the Transmission Service Provider and the transmission customer, but also the internal scheduling information to implement the transmission service sold under their tariff. To this end, Scheduling Entities may be defined for a particular Transmission segment. These entities must be listed in the proper scheduling path order (for example, importing BA, intermediate BA, exporting BA).

In the event a listed POR or POD in the Transmission Segment is listed in the Electric Industry Registry as being a DC Tie, then its registered Balancing Authority must be listed in the e-Tag as a scheduling entity.

NERC/NAESB Standards indicates that Scheduling Entities are optional items in an e-Tag. While there is no requirement in this Specification (or the XML Schema associated with it) that Scheduling Entities be listed, it should be noted that NERC/NAESB Standards requires that scheduling paths be contiguous and verified by all scheduling entities before an e-Tag is approved. Failure to include the proper scheduling entities (or failure to include them in the proper order or location) will likely result in a denied e-Tag.

### 6.1.3.3 Load

Load Segments contain information that describes a load, such as the location of the load, the interruptability of the load, and contract references that identify the load obligation. Load Segments may only utilize products in the Electric Industry Registry related to Load.

### 6.1.4 Profile Sets

Profile Sets define the level at which transactions should run, as well as the factors that set those levels. Profiles are specified as a series of time-ordered segments of duration associated with a particular profile type or types. These segments may be repeated on multiple days, if so desired. Profiles are specified as either *relative* or *absolute*, depending on the type of profile.

A *Relative* profile is described through the use of two or more values which, when combined, create a matrix of profiles. For example, a relative profile may specify a set of reference date-times (01/01/2001 06:00:00, 01/02/2001 06:00:00,) and a set of offsets relative to that date-time (00:00, 02:00, and 04:00). When multiplied together, the resultant matrix is as follows:

	<i>01/01/2001 06:00:00</i>	<i>01/02/2001 06:00:00</i>
<i>00:00</i>	<b>01/01/2001 06:00:00</b>	<b>01/02/2001 06:00:00</b>
<i>02:00</i>	<b>01/01/2001 08:00:00</b>	<b>01/02/2001 08:00:00</b>
<i>04:00</i>	<b>01/01/2001 10:00:00</b>	<b>01/02/2001 10:00:00</b>

Doing so reduces the size of the data significantly (in this case, instead of six explicit date times, only two explicit date times must be supplied, along with three simple time offsets).

An *Absolute* profile is described through the use of explicit date times. The above example, defined through absolute profiles, would be as follows:

<b>01/01/2001 06:00:00</b>
<b>01/01/2001 08:00:00</b>
<b>01/01/2001 10:00:00</b>
<b>01/02/2001 06:00:00</b>
<b>01/02/2001 08:00:00</b>
<b>01/02/2001 10:00:00</b>

While more verbose, the use of such profiles is more effective when only small profiles are to be specified, or when explicit dates in a relative profile must be referenced.

In all cases, start times must always be earlier than their associated stop times.

Both Relative and Absolute profiles may optionally contain ramp duration (in minutes) associated with both start time and stop time. The ramp stop time is not needed (and is ignored) in any profile except for the last profile. The ramp duration specifies the number of minutes over which the generator will change from the previous block level to the current block level. Interchange schedule ramping is executed between BAs using straddle ramp methods as defined above. The ramp duration exists in the e-Tag in order to provide a vehicle by which ramp duration may be exchanged between entities. Ramps may not overlap. Agent, Approval, and Authority Service software must include at least this validation plus any validation required by NERC, NAESB, or RRO standards.

#### **6.1.4.1 Profile Types**

There are five main types of profiles: Market Level, Reliability Limit, Dynamic Minimum Energy, Dynamic Maximum Energy, and Current Level.

##### **6.1.4.1.1 Market Level**

The Market Level defines the level at which the e-Tag author wishes the transaction to run. This level can be used to specify an initial value for a dynamic schedule, as well as a simple level at which the transaction is to be run.

##### **6.1.4.1.2 Reliability Limit**

The Reliability Level defines the maximum allowable level at which a transaction may run when that transaction has been identified by a Reliability Coordinator or other reliability entity as being limited by some constraint. This limit is typically used to indicate curtailments.

##### **6.1.4.1.3 Dynamic Minimum Energy**

Dynamic Minimum Energy specifies a level at which a Dynamic Schedule must minimally run. This level is provided for information purposes only.

##### **6.1.4.1.4 Dynamic Maximum Energy**

Dynamic Maximum Energy specifies a level at or under which a Dynamic Schedule must run. This level is provided for information purposes only.

##### **6.1.4.1.5 Current Level**

Current level contains the level at which the transaction should be running based on all approved Requests processed in order of receipt by the Authority Service.

#### **6.1.4.2 Profile Usage**

The above-described profiles can be used in two different ways: as Base Profiles and as Exception Profiles.

**6.1.4.2.1 Base Profiles**

Base Profiles describe the initially requested profile for implementation. At no time should there be more than one base profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from 6-22 and 8-12 for the same provider). Note that it is acceptable for profile types associated with Dynamic Schedules to overlap (i.e., Dynamic Minimum 0MW from 6-22, Dynamic Maximum 100MW from 6-22, MarketLevel 80MW from 6-22).

Different types of transactions have different Base Profile requirements:

PROFILE TYPE	REQUIRED DATA FOR BASE PROFILE
GENERATION	MARKET LEVEL DYNAMIC MINIMUM ENERGY (for Dynamic Schedule Types) DYNAMIC MAXIMUM ENERGY (for Dynamic Schedule Types)
TRANSMISSION POR	MARKET LEVEL
TRANSMISSION POD	MARKET LEVEL
LOAD	MARKET LEVEL

The Authority Service will calculate the Base Current Level profile. It is not valid for a Profile Change to contain a Base Profile.

**6.1.4.2.2 Exception Profiles**

Profile Modifications, or Exceptions, describe changes to the profile of the e-Tag that must be implemented in place of the original profile for a specified period of time. In all cases, the requested modification to the profile must go through an approval process. At no time should there be more than one exception profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from Hours Ending 6-22 and Hours Ending 8-12 for the same provider). While it is possible to request an exception that overlaps a previous exception, the end result will be a single exception profile that covers the union of the prior exception and the new exception. It is not valid for either a new e-Tag or a Correction to contain an Exception Profile. The Services are responsible for determining the appropriate Current Level based on the profiles in their possession and generating the Current Level Profile.

**6.1.4.2.2.1 Market Level Exceptions**

A Market Level Exception defines the maximum level at which the e-Tag Author wishes the transaction to run if it differs from the original Market Level. This value is designed to allow the e-Tag Author to change the level of flow for a transaction, but continue to keep the capacity committed as originally specified. In so doing, the e-Tag Author reduces the need for detailed evaluation by Transmission Service Providers, as the originally requested transaction already specified appropriate transmission resources.

**6.1.4.2.2.2 Reliability Limit Exceptions**

The Reliability Limit defines the maximum level at which a Reliability Coordinator, Balancing Authority, or Transmission Service Provider wishes to run the transaction if it differs from the Market Level. This level is designed to change the level of flow for a transaction due to TLR events, USF, loss of generation, and loss of load.

## 6.1.5 Transmission Allocations

Transmission Allocations are a special kind of profile set that defines the way in which market participants will fill their capacity commitments with transmission reservations. Transmission Allocations specify a particular reservation, the provider associated with the reservation, and profiles associated with that reservation that describe how the reservation should be consumed. Transmission Allocations must always be associated with Transmission Physical Segments; association with other segments (such as Generation or Load) is not allowed. The Maximum Reservation Capacity associated with each physical segment should be greater than or equal to the energy profile. This is validated by the Authority Service for new Tag creation requests only. Validation of subsequent adjustment Requests by the Authority Service is problematic due to sequencing and approval issues.

The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.

There are two types of profiles, both specified with Maximum Reservation Capacity profiles: Base Allocation Profiles, and Exception Allocation Profiles.

### 6.1.5.1 *Base Allocation Profiles*

Base Allocation Profiles define the original manner in which transmission reservations were allocated to meet capacity commitments. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed. These segments may be repeated on multiple days, if so desired.

### 6.1.5.2 *Exception Allocation Profiles*

Exception Allocation Profiles define the manner in which transmission reservations are allocated to meet capacity commitments during changes to a Base Allocation Profile. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed, and supersede data supplied in their corresponding base profile.

## 6.1.6 Loss Accounting

Loss Accounting data specifies the manner in which losses should be accounted for over a specified period of time. Over time, an e-Tag Author may elect to specify different choices for how losses will be provided. Each specification creates (or overwrites) Loss Method Entries, which are used to determine how losses are to be applied.

## Section 7 - Messaging Overview

### 7.1 Messaging Concepts

#### 7.1.1 Use of the Transmission Control Protocol/Internet Protocol

The services defined in this document utilize the public Internet as their physical communication layer. Therefore, the underlying root protocol for this specification shall be Transmission Control Protocol/Internet Protocol or TCP/IP. Utilization of Hypertext Transfer Protocol Secure or HTTPS using NAESB PKI standard compliant certificates is required. The requirement for NAESB PKI standard compliant client certificates will be phased in over time as infrastructure, such as the Electric Industry Registry, are available to support the implementation. Additionally, the services defined in this document shall send data via both Port 80 and 443, the common known port for HTTP and HTTPS respectively, or any other port specified in the URL supplied in the registry, using TCP connections. The use of HTTP or HTTPS will be based on the fully qualified URL. For HTTPS connections, a client certificate may be used. The recipient of an HTTPS connection must verify that the client certificate presented (if one is present) is valid for the sending entity.

When participating entities register for service, they will be required to supply information on the manner in which their implementation will address certain needs. Explicitly, they will need to define:

- URL, Certificate Issuer, and Common Name for Authority Service (BAs only)
- URL(s) for Reliability Coordinator Forwarding (BAs only)
- URL, Certificate Issuer, and Common Name for Approval Service (BAs, Transmission Service Providers, and optionally PSEs)
- URL, Certificate Issuer, and Common Name for Agent Services (PSEs and optionally BAs)

For the purposes of this document, a URL can be considered a two-part description of a resource. The first part describes the scheme used to communicate and the host the communication is to take place with:

`http://www.nerc.com` or `https://www.nerc.com`

The second part is the Uniform Resource Identifier (URI). It describes a particular resource on a host:

`/~gads/meetings.html`

This distinction is important in that when implementing this Interface, the first portion of a URL will define the host to connect to, while the URI will define what resource to apply HTTP or HTTPS request to. Therefore, the following URL:

`http://www.nerc.com/~gads/meetings.html`

would be interpreted in the following manner:

<TCP/IP command> connect to “www.nerc.com”

<Application specific command> write the HTTP request to the connection

In the above example, the request would be:

“GET /~gads/meetings.html HTTP/1.1”

Both client and server certificates used for e-Tag communications must be compliant with NAESB PKI standards.

### **7.1.1.1           Establishing Connections**

Establishing connections should be handled in the manner defined by the TCP/IP protocol.

**For automated responses to queries, automated distributions, and other actions not specifically initiated by a person’s action (CallbackHistory, CallbackSummaries, CallbackTags, DistributeCorrection, DistributeNewTag, DistributePotentialTLRProfileChange, DistributeResolution, DistributeProfileChange, DistributeStatus, RequestProfileChange\*):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must follow the procedures below prior to assuming the recipient’s service is unavailable and indicating a message failure:

At least three (3) attempts must be made to make the connection, with no less than five (5) seconds between each attempt, with the maximum time between the first and last attempts not to exceed two (2) minutes.

**For actions specifically initiated by a person’s action, such as Requests, Actions, and Queries (QueryHistory, QueryRequest, QueryRequestIDs, QueryStatus, QuerySummaries, QueryTag, QueryTags, RequestCorrection, RequestNewTag, RequestProfileChange\*, SetState, WithdrawRequest):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must assume the other service is unavailable and *immediately* indicate a message failure.

In both cases, message failures must alert the operator of the service attempting to send the message.

\*If an automated system is issuing RequestProfileChange (i.e., an RAS), then the system *must* retry the connection. If the issuer is a person or operator, the system *must not* retry the correction, and instead alert the operator of the failure.

#### **7.1.1.1.1           Partial Connection Failures**

Should a connection attempt appear to fail between the Agent, Authority, and/or Approval Services, yet messaging succeeded, an invalid set of errors may be encountered by re-sending the same message (i.e., e-Tag ID Not Unique errors), leading the sender to report incorrect error information. Should such a message duplication be attempted, the receiving service must respond back with a return State of DUPLICATE, and return any original additional response data back to the user (i.e., information other than that

contained in the ReturnState data structure). This requirement does not apply to messages that it is valid to send multiple times such as query messages.

A message shall be considered a duplicate if

- The method called is the same as the previous message and,
- The entire MessageInfo data collection is the same as the previous message.

It should be noted that this behavior may only occur when messages are duplicates. For instances where a request is made and the information is *not* duplicated, the message must either be processed as a new message or marked as an error, depending on the specific situation (for example, submitting a new e-Tag with a previously submitted e-Tag ID is invalid, but submitting a new Profile Change must be processed normally).

#### **7.1.1.1.2 Combining Messages**

Previous versions of e-Tag allowed for the combining of messages in order to reduce messaging overhead. For BAs, Transmission Service Providers, and PSEs, this functionality is no longer supported; for each specific entity, a distinct and separate message must be sent. For RCs, it is still allowed to send one message per unique forwarding URL.

## **7.1.2 Use the Hypertext Transport Protocol**

e-Tag messaging is accomplished through the use of the Hypertext Transport Protocol (HTTP) over the public Internet, optionally using SSL (HTTPS). The e-Tag services defined in this document utilize HTTP 1.1.

### **7.1.2.1 HTTP/S Requests**

The services defined in this document utilize a single HTTP method: the POST method. This method is used for sending data to a server for processing. The standard format of an HTTP Request Header is as follows:

<HTTP method> <resource URI> <HTTP Version>

In this implementation, all Request Headers will exist as the following:

POST <resource URI> HTTP/1.1

This specifies the POST method is to be used, the path and name of the processing resource, and that using HTTP 1.1 is the protocol and version being used. Additional header fields required are described below:

Content-type: text/xml

Declares that the type of data attached to the POST request will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient utilizes this byte length to retrieve the Payload

SOAPAction:NERCETag18:<method name>

Indicates that the action being requested is part of the NERC e-Tag 1.8 library of methods, and specifies the method being called.

A Carriage Return/Line Feed terminates each header line. The request is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP headers, followed by the Entity Data or Payload.

### 7.1.2.2 HTTP/S Responses

HTTP Responses are returned to a client with the following syntax:

<HTTP Version> <State Code> <Explanation>

The State codes below are utilized and understood by the e-Tag services defined in this document:

200	OK	States that the POST request was accepted and appears to be valid
400	Bad Request	States that the POST request was accepted but appears to point to an invalid URI or does not contain a valid Content-Type

Successful responses will be followed with an entity descriptor, describing the data to follow:

Content-type: text/xml

Declares that the type of data attached to the response will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient uses this byte length to retrieve the Payload.

A Carriage Return/Line Feed terminates each response line. The response is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP response, followed by the Entity Data or Payload. The payload for the purposes of this document shall be an e-Tagging Messaging Protocol message.

The server terminates the connection when the last of the payload has been transmitted.

### 7.1.3 How SMXP Works

All e-Tag 1.8 messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, you invoke procedures on remote machines, and pass any needed data as input parameters to the function. When the function is complete, it returns the result of its processing. The SMXP protocol is layered on top of the HTTP protocol, which handles all of the underlying communication. SMXP defines the set of rules for encoding remote procedure call parameters into HTTP POST messages, as well as the set of rules for how such messages must be processed by a remote server.

The steps of executing an SMXP method are as follows:

- A request is generated, containing the method name and any needed parameters.
- The request is sent via HTTP to a listener on the remote machine.
- The remote machine receives the SMXP request, and examines it to determine which method must be executed.
- The remote machine executes the appropriate method and packages the result into an SMXP compliant XML document.
- The remote machine returns that document to the calling machine (again via HTTP).

Each SMXP method call has two important parts – the request and the response. Most of the methods used in e-Tag 1.7 are *synchronous* methods, meaning that once the calling machine makes a request, it waits for a response containing the results of its request before continuing.

In a few cases, *asynchronous* methods are used. In an asynchronous method, a request is generated and sent to a remote machine. The remote machine places the request into a queue, and sends a response to the calling machine that indicates the request has been received and queued for processing. The connection is then terminated. At some point in the future, the remote server runs the requested method and sends the result to the calling machine via a separate SMXP message (requiring a second request/response pair). Electronic e-Tagging systems are only required to support the processing of one method call per connection session. Multiple calls per session are not supported.

## 7.1.4 Method Types

E-Tag 1.7 uses various types of methods for various purposes. The methods can be broken up into the following categories.

### 7.1.4.1 **Requests**

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

### 7.1.4.2 **Request Distributions**

Request Distributions are the methods used to send requests to the all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

### 7.1.4.3 **Actions**

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

### 7.1.4.4 **Information Distributions**

Informational distributions are the methods used to send information related to the State of a particular request or set of transactions. These are sent to entities to alert them of particular requests implementation or withdrawal, as well as specific entities approvals and denial of a request.

#### **7.1.4.5 Queries**

Query methods are used to search and recover data from an Authority Service or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query. Queries may be sent more than once for the same data, however, Queries sent more than five times for the same data may be rejected.

#### **7.1.4.6 Callbacks**

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

#### **7.1.5 Faults**

Fault messages are returned by any SMXP method that does not complete due to a structural error in the request. Such errors include any schema validation errors, such as incorrect data types and bad element ordering. Faults are also generated by message syntax errors, namespace errors, and some types of communication error. Fault messages indicate that processing was terminated before the requested procedure could be run. The SMXP specification defines the standard format and content for fault messages. Operators of the service attempting to send the message must be alerted to the receipt of any faults.

#### **7.1.6 Return Values**

Each method returns a State code that reports whether or not the method call was successful. A Return value of "SUCCESS" indicates that there were no errors in the method invocation, and that valid data was passed into the method. A value of "FAIL" indicates that the method did not run successfully. If the State code is set to FAIL, then an error message must be included which describes the error that was encountered. Operators of the service attempting to send the message must be alerted to the receipt of any FAIL returns.

In certain cases, the method may return a value of "DUPLICATE." This value indicates that the method being called has been previously called with identical parameters and a response has already been returned. Typically, this value is received after a partial connection failure and subsequent retry.

#### **7.1.7 Error Messages**

Error messages are generated whenever a method does not complete successfully due to problems with provided parameters or execution of the query (unless the problems have already been defined by a fault or HTTP error message). If an error message is present, the State code must have a value of FAIL. Error messages indicate that the method was executed, but was unable to fulfill the caller's request due to problems encountered

during the processing of the request. Error messages can be caused by passing invalid (but syntactically correct) data to a method or by internal system failures or outages.

## **7.2 Method Descriptions**

The six fundamental method types align with the system concepts defined in Section 1 of this document. Those types are Requests, Request Distributions, Request Actions, Information Distributions, Queries, etc. Details about the exact composition of these various data elements are defined in the latest e-Tag schema .

### **7.2.1 Special Data Structures**

Some methods require specific data structures. In cases where the structure is unique to a particular method, the structure will be defined with the method description. Other generic structures are defined below.

#### **7.2.1.1 Tag ID**

Tag IDs are values that uniquely identify an e-Tag. It is composed of four values:

- The Source BA's Entity Code
- The authoring PSE's Entity Code
- The e-Tag Code assigned by the PSE to aid in identification of the transaction
- The Sink BA's Entity Code

The combination of these values must uniquely identify the e-Tag. At no point in time may two active e-Tags exist with the same e-Tag ID. To ensure this, an e-Tag ID may NOT be "reused" until a minimum of one (1) year has passed since the last point in time in which the e-Tag previously using the e-Tag ID ran.

#### **7.2.1.2 Message Info**

Message Info is a collection of data used to describe the basic communication characteristics of an e-Tag message. Message info is composed of four values:

- The Entity Code of the entity initiating the message transfer
- The Security Key used to ensure validity of the message
- The Entity Code of the entity to whom the message is being transferred
- A date and time indicating when the message was generated

This information must be used to identify message participants, as well as provide simple authentication and audit information.

#### **7.2.1.3 Return State**

Return State is a collection of data used to indicate the general results of a message being processed. Return State has three specific components:

- A date and time indicating when the return was generated
- A State of the processing
- Optionally, a list of errors encountered during the processing of the message

This information must be used to communicate semantic problems with a message back to a message initiator.

### 7.2.1.4 Miscellaneous Info

In many messages, it is possible to communicate token/value pairs of non-standard information. This is included as a convenience and method for extending the e-Tagging system. By using the Miscellaneous Info function, entities can pass along data to other parties that are not directly supported by the data model. For example, when initiating a curtailment request, an entity could provide various other information components, such as:

IMPACTED FLOWGATE : 1178  
PROCEDURE : LLR

It is intended that entities make use of this feature in a standard, published manner that will allow recipients to process and utilize the information transferred.

### 7.2.2 Errors and Error Lists

The following are errors that may be supplied by the recipient of a method call should an error condition exist. The responder must provide an error number and a textual description of the error that provides specific detail about the error (i.e., information that will help the user resolve the problem). Supported errors are:

0001	Tag Already Exists	The e-Tag ID provided has already been used on an e-Tag held by the responding service.
0002	Tag Not Found	The e-Tag ID referenced is one not held by the responding service.
0003	Segment Not Found	The Segment referenced is not one held by the responding service
0004	Request Not Finalized	The profile cannot be changed, as it has not yet been finalized.
0005	Request Finalized	The e-Tag cannot be corrected or withdrawn, as it has already been finalized (CONFIRMED, IMPLEMENTED, etc.)
0006	Request Not Found	The referenced request is not one held by the responding service
0007	Stale Request	The request is inappropriate due to timing requirements.
0008	Invalid Range	The range specified exceeds or otherwise violates the rules associated with its definition
0009	Invalid Security Key	The Security Key provided is not correct
0010	Tag Not Requested	The e-Tag being presented is not one requested by the responding service
0011	Insufficient Rights	The requester does not have appropriate rights
0012	Contact Not Specified	A contact is required to be specified, and was not provided
0013	Reason Not Specified	A Reason is required to be specified, and was not provided
0014	Invalid Return Rate	The Return Rate was either not specified or

		incorrectly formatted
0015	Correction not allowed	The proposed correction would change the physical or financial path, which is not allowed.
0016	Missing Correction	The SetState request cannot complete because the Approver does not have the most recent correction for the segments in their scope.
0017	Missing DC Tie Operator	The RequestNewTag method cannot complete because a Balancing Authority registered to operate a requested DC Tie was not included as a Scheduling Entity for the Transmission Service Provider in the e-Tag.
0018	Orphan Profile	Every Profile must be reference by at least one Physical Segment
0019	Profile Not Found	The profile being referenced was not found in the e-Tag
0020	Invalid Path Order	The Market Segments, Physical Segments, and Parent market Segment References must be in correct order.
0021	Invalid Registered Value	A registered value is incorrect. This includes invalid or incorrect to/from entities, deactivated or unregistered PORs/PODs and/or Sources/Sinks, and non-existent products.

## 7.2.3 Initiating a Request

### 7.2.3.1 *Special Data Structures*

#### 7.2.3.1.1 **TimeClassification**

Used to indicate to an e-Tag Author that a request was received On-time, Late, or ATF based on the timing tables in the NERC/NAESB Standards.

### 7.2.3.2 *Request New Tag*

**Issued by:** Agent Services

**Processed by:** Authority Services

**Purpose:** Used to submit a new e-Tag to the Authority Service for processing.

In	Message Info	Required
	Tag	Required
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0001Tag ID Already Exists	
	0007 Stale Request	

	0017 Missing DC Tie Operator
	0018 Orphan Profile
	0020 Invalid Path Order
	0021 Invalid Registered Value

### 7.2.3.3 Request Correction

**Issued by:** Agent Services

**Processed by:** Authority Services

**Purpose:** Used to submit changes to a new e-Tag while it is being evaluated by Approval Entities

In	Message Info	Required
	ContactInfo	Required
	Tag ID	Required
	Correction List	Required
	Notes	Optional
Out (successful)	Return State	
	Correction ID Set	
Errors	0002 e-Tag ID Not Found	
	0003 Segment Not Found	
	0005 Request already in Final state	
	0009 Invalid Security Key	
	0015 Correction Not Allowed	
	0021 Invalid Registered Value	

### 7.2.3.4 Request Profile Change

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to change the energy level or transmission allocation associated with a particular e-Tag.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Market Profile Change OR Reliability Profile Change	Required
	Miscellaneous Info List	Optional
	Notes	Optional
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0002 e-Tag not found	

	0007 Stale Request
	0009 Invalid Security Key
	0011 Insufficient Rights
	0012 Contact not Specified
	0013 Reason not Specified
	0019 Profile Not Found
	0021 Invalid Registered Value

## 7.2.4 Request Distribution

### 7.2.4.1 *Special Data Structures*

#### 7.2.4.1.1 Approval Rights Flag

Used to indicate that a recipient of a request distribution has approval rights over the request.

#### 7.2.4.1.2 Impact Flag

Used to indicate that a recipient of a correction request distribution has a need to re-evaluate the e-Tag based on the correction.

### 7.2.4.2 *Distribute New e-Tag*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to distribute New e-Tag Requests to parties with rights to view or approve the request.

In	Message Info	Required
	Tag	Required
	Approval Rights	Required
	Late	Optional
Out (successful)	Return State	
Errors	0001 e-Tag already exists	
	0021 Invalid Registered Value	

### 7.2.4.3 *Distribute Correction*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to distribute a correction to parties with rights to view or approve the original New e-Tag Request.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required

	Correction List	Optional
	Loss Accounting List	Optional
	Impact Flag	Required
	Late Flag	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0003 Segment Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

#### **7.2.4.4          *Distribute Profile Change***

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to distribute a request to change a profile to the parties with rights to view or approve the original New e-Tag Request.

In	Message Info	Required
	Contact info	Required
	Tag ID	Required
	Approval Rights	Required
	Request ID	Required
	Requestor	Required
	Late	Required
	Exception Profile Change	Optional
	Transmission Allocation Change List	Optional
	Loss Accounting Change List	Optional
	Misc Info list	Optional
	Notes	Optional
	Request Time Stamp	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

#### **7.2.5 Request Actions**

##### **7.2.5.1          *Set State***

**Issued by:** Approval Services

**Processed by:** Authority Services

**Purpose:** Used by entities with Approval Rights to a request to specify their commitment to implement or reject the request.

In	Message Info	Required
	Tag ID	Required
	Scope	Required
	Request Ref	Required
	Approval Status	Required
	Approval Time Stamp	
	Notes	Optional*
Out (successful)	ReturnState	
Errors	0002 e-Tag Not Found	
	0003 Segment not Found	
	0005 Request Finalized	
	0009 Invalid Security Key	
	0013 Reason not Specified	
	0016 Missing Correction	
	0021 Invalid Registered Value	

\*Required for states of Denied or Study.

### 7.2.5.2 **Withdraw Request**

**Issued by:** Agent, Approval, and RA Services

**Processed by:** Authority Services

**Purpose:** Used by request authors to remove their request from consideration prior to the completion of its evaluation.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not specified	
	0021 Invalid Registered Value	

### 7.2.5.3 **Terminate Request**

**Issued by:** Agent and Approval Services

**Processed by: Authority Services**

**Purpose:** Used by request authors to set the transmission and energy profiles of an e-Tag to zero and set its state to TERMINATED after the request has transitioned to IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	DateTime	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not specified	
	0021 Invalid Registered Value	

**7.2.6 Information Distribution**

**7.2.6.1 Distribute Status**

**Issued by: Authority Services**

**Processed by: Agent, Approval, and RA Services**

**Purpose:** Used to notify entities with Approval and Viewing rights of other Approver's actions with regard to a particular request.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
	Status List	Required
	Flowgate List	Optional*
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.2 *Distribute Resolution*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to notify entities with Approval and Viewing rights of the final resolution of a particular request.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
	Request Status	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.3 *Distribute Potential TLR Profile Change*

**Issued by:** RA Services

**Processed by:** Agent Services

**Purpose:** Used to inform e-Tag Authors about potential impending profile changes due to TLR.

In	Message Info	Required
	Start Date Time	Required
	TLR Event Ref	Required
	Misc Info list	Optional
	TLR Profile Change List	Required
Out (successful)	Return State	
Errors	0021 Invalid Registered Value	

### 7.2.6.4 *Callback Potential TLR Profile Change*

**Issued by:** Agent Services

**Processed by:** RA Services

In	Message Info	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

## 7.2.7 Query Functions

### 7.2.7.1 Query Summaries

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to request a list of e-Tags and keys based on search criteria. Primarily used for recovery purposes.

In	Message Info	Required
	Range	Required
Out (successful)	Request ID	
Errors	0008 Invalid Range	
	0021 Invalid Registered Value	

### 7.2.7.2 Callback Summaries

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send a list of e-Tags and keys to an entity that has previously requested via QuerySummaries.

In	Message Info	Required
	Tag Summary List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.3 Query e-Tag

**Issued by:** Agent Services, Approval, and RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
Out (successful)	Return State	
	Tag	
Errors	0002 e-Tag not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.4 Query e-Tags

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to request multiple e-Tags from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag Credential List	Required
	Return Rate	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0014 Invalid Return Rate	
	0021 Invalid Registered Value	

### 7.2.7.5 Callback e-Tags

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send multiple e-Tags from an Authority Service to an entity that requested them via QueryTags. Primarily used for recovery purposes.

In	Message Info	Required
	Tag List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0010 e-Tag Not Requested	
	0021 Invalid Registered Value	

### 7.2.7.6 Query History

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a single e-Tag's History from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.7 **Callback History**

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send a single e-Tag's History from an Authority Service to an entity that requested it via QueryHistory. Primarily used for recovery purposes.

In	Message Info	Required
	History	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.8 **Query Request**

**Issued by:** Agent Service, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a specific request for a single from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
Out (successful)	Return State	
	RequestProfileChange	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.9 **Query Request IDs**

**Issued by:** Agent Service, Approvals, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a list of requests made regarding a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Status(es)	Optional
Out (successful)	Return State	

	Request ID Summary List
Errors	0002 e-Tag Not Found
	0009 Invalid Security Key
	0021 Invalid Registered Value

### 7.2.7.10 Query Status

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a request's State from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
Out (successful)	Return State	
	Request State	
	Approver State List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.11 QueryAvailability

**Issued by:** Agent and Approval Services

**Processed by:** Agent, Approval, and Authority Services

**Purpose:** Used to determine availability/status of an e-Tagging service. Primarily used to evaluate system performance.

In	From Entity	Required
	To Entity	Required
Out (successful)	Return Time Stamp	
	Request Value	
Errors	0021 Invalid Registered Value	

## **Section 8 - Implementation Requirements**

### **8.1 Notifications**

#### **8.1.1 Modifications Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services that it is anticipated will have an impact on interoperability must coordinate the implementation with the NERC/NAESB subcommittee or working group responsible for the e-Tag specifications. NERC/NAESB will require structured interoperability testing for any changes impacting interoperability prior to implementation.

#### **8.1.2 Modifications Not Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services must send notification to the appropriate list server(s) 1 business day prior to implementation. In the event of a critical bug correction, this requirement is waived.

### **8.2 E-Tag System Enhancement Process**

#### **8.2.1 Change Drivers**

Changes and enhancements to the e-Tag system are generated through both industry driven efforts and by individual entities (e-Tag vendors and e-Tag system users). Industry driven changes include (1) mandated changes from NAESB business practices, NERC standards, or FERC orders; (2) enhancement requests from any e-Tag system vendor or user; (3) corrections and clarifications by NERC/NAESB or (4) modifications to reflect changes in the industry (such as the creation of the functional model).

#### **8.2.2 Creation of the Revised Specification and/or Schema**

Modifications are typically bundled into a single e-Tag revision. The JESS reviews the modification requests and integrates them into the specification and/or schema if possible. The modified specification and/or schema are then posted for comment by the industry participants and comments are addressed by the JESS. The JESS's responses are subsequently posted. This process circles until the JESS has addressed all comments and concerns. The JESS then submits the revised e-Tag specifications to the NERC IS for review and discussion. The JESS then works with the vendors to prepare final specification revisions and XSD revisions in order to take advantage of any existing infrastructure and ensure that there are no problems created by the revisions. Any comments and concerns are addressed and the final product is sent to the NAESB EC for approval.

### **8.2.3 Interoperability Testing Period**

The JESS also creates structured interoperability test scenarios, structured interoperability test registry data, and interoperability test plans. The JESS also facilitates the structured tests and resolve any disagreements in specification interpretation. The testing period consists of structured interoperability tests that involve all vendors in all service roles that they provide. These tests continue until all vendors pass the tests (or as mutually agreed). Test participants are also required to make their test systems available for other participants to utilize for development and testing. The JESS may also schedule additional testing in order to minimize risk and maximize the probability of success. Subsequent to successful completion of all tests, the industry is given one month at a minimum to deploy modified software in preparation for implementation.

### **8.2.4 Implementation**

The JESS, working with the vendors, creates an implementation schedule and plan. This plan includes all steps necessary to transition between the old version of e-Tag and new version of e-Tag. This plan is also submitted to the industry for comment and comments are acted on and responded to. Finally, JESS coordinates continent wide implementation and facilitates resolution of any problems.

## Appendix A Special Interconnection Implementation Requirements

### *Introduction*

This appendix contains information that the e-Tag vendors need to know in order to correctly implement the e-Tag services. The regional (RRO) details that impact interoperability or require additional functionality or validation by the Authority Service should be included in this appendix.

If these do not impact interoperability or require implementation of specific features by the Authority Service then they need not be included in this appendix. Instead these may be accessed from the [NAESB web site](#) (modify this when the URL is provided).

### **WECC Interconnection**

#### **Introduction**

WECC business standards require some additional features to the standard tagging implementation. The sections below describe the additional requirements for parties providing tagging services to WECC members. These additional requirements are mandatory for all Agent, Approval, and Authority Services used in the western interconnection, and optional for services used by other interconnections.

#### **INT-BPS-009**

INT-BPS-0009 applies to all tags of transaction\_type = "Capacity" that contain a sink point associated with the WECC region.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must only use energy product C-SP or C-NS.
- Any reliability entity (BA or Transmission Service Provider) may adjust the market-level energy profile. They may not change nor add transmission allocations.
- The Load-Serving-Entity listed on the tag has the same adjustment rights as the tag author or Creating Purchasing-Selling-Entity (CPSE) (can adjust energy or transmission or both).
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag's Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag

changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.

### **INT-BPS-011**

INT-BPS-011 applies to all tags of transaction type = “Recallable” that contain both a source and a sink point associated with the WECC region. Note that the version of INT-BPS-011 currently available from WECC references tags of transaction type = Normal. It was subsequently decided that this requirement should be implemented using a new transaction type (referred to as Recallable) instead. References to Normal in the INT-BPS-011 standard should always be interpreted as Recallable.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must use energy product C-RE.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag’s Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.

### **INT-BPS-014**

INT-BPS-014 applies to all tags that both the source and sink points are associated with the WECC region for transaction type = NORMAL.

The following additional tagging requirements apply to all such tags:

- The first market segment (the GPE) must contain MiscInfo with:  
Token = “WECC\_Reserve\_Responsible\_Entity”,  
Value = the name of the entity filling the role of “responsible entity” selected as described in the WECC business practice.
- In the case where the RE is NOT the Source BA, the following must be provided:  
The first market segment must also contain MiscInfo with  
Token = “WECC\_Reserve\_Responsible\_Entity\_Type”,  
Value = BA or PSE.  
Tags that are required to contain a reserve obligation multiplier must contain MiscInfo (in the first market segment) with

Token = "WECC\_Reserve\_Multiplier",  
Value = 5, 7, or 100.

- Agent and Authority Services will retain a list of which PSEs are registered with WECC as valid RSG members. This list will be made available for programmatic download via webService or other standard mechanism to be provided by WECC. No validation will be done to support this business practice until the RSG member list is available for download. The list is available at:  
<http://www.wecc.biz/documents/library/ESWG/WECCBP14-PSERE.csv>
- The Business Practice contains additional implementation details.

### ***Eastern Interconnection***

No Special Implementation Requirements have been identified.

### ***ERCOT***

No Special Implementation Requirements have been identified.

### ***Quebec Interconnection***

No Special Implementation Requirements have been identified.

# Electronic Tagging Functional Specification

Version 1.8.~~0~~1

NOT YET APPROVED FOR IMPLEMENTATION

~~November 7, 2007~~

September 2, 2009

Joint ~~Interchange~~Electric Scheduling  
Subcommittee  
~~Work Group~~

North American Energy Standards Board – Wholesale Electric  
Reliability Corporation Quadrant

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## Section 1 - Functional Description

### 1.1 Introduction

#### 1.1.1 Purpose

This document describes the functional requirements and detailed technical specifications for the implementation of an electronic Transaction Information System (TIS), ~~also referred to~~ currently implemented as Electronic Tagging or ~~just~~ e-Tag. These requirements and specifications provide a basis for tools designed to facilitate identification and communication of interchange transaction information (e-Tags) between parties in accordance with NERC Reliability Standards and NAESB Wholesale Electric Quadrant Business Practice Standards.

#### 1.1.2 E-Tag Related References

Data Information related to the JESS (formerly JISWG ~~and this work~~) can be found at [http://www.naesb.org/weq/weq\\_jiswgjess.asp](http://www.naesb.org/weq/weq_jiswgjess.asp)

The most recent copy of the e-Tag 1.8.1 XML Schema can be found at <http://reg.tsin.com/Tagging/e-Tag/>

For detailed information regarding NAESB Standards, please see <http://www.naesb.org/>

For detailed information regarding NERC Standards, please see <https://standards://www.nerc.net/com/>

The Hypertext Transport Protocol version 1.1 is described by W3C RFC 2616 and can be obtained at <http://www.w3.org/Protocols/HTTP/1.1/rfc2616.txt.gz>

The XML Schema Protocol is defined by the W3C and can be downloaded from <http://www.w3.org/2000/10/XMLSchema>

The Simple Method exchangeXchange Protocol (SMXP) ~~is~~ was defined by the OASIS Standards Collaborative and can be found ~~on the TISWG site~~ at: <http://reg.tsin.com/Tagging/e-Tag/>

<http://reg.tsin.com/Tagging/e-tag/>

### 1.1.3 Change Log

Version	Change	spare
1.7096	Accepted all changes in 1.7095 posted document	
	Replaced NERC policy references with NERC/NAESB Standards references	
	Incorporated Functional Model language	
	Added Change Log	
	Updated other references and URLs	
	Market Re-dispatch (MRD) language and function removed	
1.7.097	Removed Passive Approval by Reliability Entities	
	Extend e-Tag creation to 48 hours into the past	
	Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags	
	Remove 24 hour limit on Reliability Adjustments	
	Remove Counter Party Reports	
	Remove references to MRD	
	Add Optional Approval Rights for any PSE cited in the transmission allocation	
	Replaced various state diagrams with descriptive wording	
	Strike automatic approval of cancellations	
1.8	Remove Background section	
	Add reference to default ramp rate definitions	
	Add new final states and their definitions	
	Add Rounding definition	
	Add Ramp Duration validation	
	Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)	
	Modify in-kind loss calculations	
	Define which Functional Model entities can be Scheduling Entities (BA)	
	Strike Appendix A	
	Strike erroneous current level warning	
	Carbon Copy list (no approval, sent copies of e-Tag)	
	Calculation of ActOnByTime and ImplementTime	
	Addition of TimeClassification (Late, OnTime, ATF)	
	NERC web site changed to Electric Industry Registry web site	
	Added RequestTerminateTag and related handling	
	Simplify Recovery function	
	Allow ATF e-Tags to be Terminated	
	Allow Source or Sink to modify DYNAMIC e-Tag with actual data	

	<del>Transmission Allocation must be <math>\geq</math> energy profile.</del>	
	<del>Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority</del>	
	<del>Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard</del>	
	<del>Extend e-Tag creation to 168 hours into the past</del>	
	<del>Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags</del>	
	<del>Current Level no longer distributed (calculated based on approved requests in request order)</del>	
	<del>Change Tag Agent, Tag Approval, Tag Authority to Agent, Approval, Authority</del>	
	<del>Change Tag to e-Tag</del>	
	<del>Add Pseudo Tie tag type.</del>	
	<del>Add functionality to allow TSP to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm</del>	
	<del>Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.</del>	

<u>Version</u>	<u>Change</u>
<u>1.7096</u>	<u>Accepted all changes in 1.7095 posted document</u>
	<u>Replaced NERC policy references with NERC/NAESB Standards references</u>
	<u>Incorporated Functional Model language</u>
	<u>Added Change Log</u>
	<u>Updated other references and URLs</u>
	<u>Market Re-dispatch (MRD) language and function removed</u>
<u>1.7.097</u>	<u>Removed Passive Approval by Reliability Entities</u>
	<u>Extend e-Tag creation to 48 hours into the past</u>
	<u>Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags</u>
	<u>Remove 24 hour limit on Reliability Adjustments</u>
	<u>Remove Counter Party Reports</u>
	<u>Remove references to MRD</u>
	<u>Add Optional Approval Rights for any PSE cited in the transmission allocation</u>
	<u>Replaced various state diagrams with descriptive wording</u>
	<u>Strike automatic approval of cancellations</u>
<u>1.8</u>	<u>Remove Background section</u>
	<u>Add reference to default ramp rate definitions</u>
	<u>Add new final states and their definitions</u>
	<u>Add Rounding definition</u>
	<u>Add Ramp Duration validation</u>
	<u>Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)</u>

	<u>Modify in-kind loss calculations</u>
	<u>Define which Functional Model entities can be Scheduling Entities (BA)</u>
	<u>Strike Appendix A</u>
	<u>Strike erroneous current level warning</u>
	<u>Carbon Copy list (no approval, sent copies of e-Tag)</u>
	<u>Calculation of ActOnByTime and ImplementTime</u>
	<u>Addition of TimeClassification (Late, OnTime, ATF)</u>
	<u>NERC web site changed to Electric Industry Registry web site</u>
	<u>Added RequestTerminateTag and related handling</u>
	<u>Simplify Recovery function</u>
	<u>Allow ATF e-Tags to be Terminated</u>
	<u>Allow Source or Sink to modify DYNAMIC e-Tag with actual data</u>
	<u>Transmission Allocation must be &gt; energy profile.</u>
	<u>Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority Services</u>
	<u>Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard</u>
	<u>Extend e-Tag creation to 168 hours into the past</u>
	<u>Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags</u>
	<u>Current Level no longer distributed (calculated based on approved requests in request order)</u>
	<u>Change Tag Agent, Tag Approval, Tag Authority Services to Agent, Approval, Authority Services</u>
	<u>Change Tag to e-Tag</u>
	<u>Add Pseudo Tie tag type.</u>
	<u>Add functionality to allow Transmission Service Provider to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm in sections 3.6.1.3, 4.6.1.1, and 4.6.1.2</u>
	<u>Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.</u>
<u>1.8.1</u>	<u>Modified CANCELLED definition</u>
	<u>Added statement regarding specification/schema relationship in section 1.4</u>
	<u>Modified sections 1.2, 1.4.1.2, 1.4.9.2, 2.7, 3.6.1.1.1, and 4.7 regarding Secondary Service URLs</u>
	<u>Modified section 1.4.9.4 to clarify the Authority Service archive requirements</u>
	<u>Made changes to sections 1.6.5.1, 2.6.5.2.1, 3.6.5.2.1, and 4.6.5.2.1 to support a 25 hour day</u>
	<u>Added language addressing profile start times and durations in section 2.6.1.1, 3.6.1.1,</u>
	<u>Clarified that entities may not be added or removed in profile change requests in section 2.6.1.3, 3.6.1.3, and 4.6.1.2 and deleted text in 3.6.2.2</u>
	<u>Removed the requirement to include a reason when withdrawing a request in section 2.6.3.2, 3.6.3.2, and 4.6.3.2</u>
	<u>Minor wording correction in 3.4</u>

	<u>Removed a validation item in section 3.6.3.1</u>
	<u>Corrected the spelling of Authority Service Operator in several places and added to definitions</u>
	<u>Added requirement for Authority Service to set ActOnByTime and TimeClassification in section 3.6.3.2 and in 3.6.3.3</u>
	<u>Added requirement for asynchronous response in section 3.6.5.2</u>
	<u>Deleted bullet item from section 4.6.3.1</u>
	<u>Revised references to PKI in section 7.1.1</u>
	<u>Agent, Approval, Authority, and RAS references changed to Agent Service, Approval Service, Authority Service, and RA Service for clarity.</u>
	<u>TSP changed throughout to Transmission Service Provider for clarity</u>
	<u>Created Appendix A – Special Interconnection Implementation Requirements</u>
	<u>Modified 1.4.2.2 and 3.6.1.1.1 definition of duplicate row for the distribution list and modified the distribution list record example</u>
	<u>Added definition of Tagging Entity ID</u>
	<u>Modified 1.4.6 and 2.6.1.3 to clarify that e-Tag authors may adjust DYNAMIC type e-Tags after the fact (after the current scheduling period) in order to reflect metered values. This included language requiring the clearing of any previously existing reliability limits.</u>
	<u>Added Section 8 – Implementation Requirements</u>
	<u>Modified section 3.7 – added language from NAESB WEQ-004 regarding Authority Service implementation and performance</u>
	<u>Added Acronym column to Definitions Table in section 1.2</u>
	<u>Updated links in section 1.1.2</u>
	<u>Modified 1.4.6, 2.6.1.3, and 3.6.1.3 to clarify that e-Tag authors may not the Transmission Allocation profile for DYNAMIC type e-Tags after the fact (after the current scheduling period).</u>
	<u>Modified 3.6.1.3 to allow loss profile adjustments in a DYNAMIC type e-Tag ATF adjustment request.</u>
	<u>Eliminated “spare” column in change table</u>

## 1.2 Definitions

Term	Definition
<del>{Source BA, Sink BA, PSE} Code</del>	<del>Entity Code defined in the Electric Industry Registry</del>
<del>ACTIVE</del>	<del>An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.</del>
<del>Active Approval</del>	<del>An approval or denial that occurred through an entity's deliberate indication of their intent.</del>
<del>Approval Entity</del>	<del>Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.</del>
<del>Approval Rights</del>	<del>The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.</del>
<del>Approval State</del>	<del>The State communicating an Approval Entity's willingness to implement a particular Request.</del>
<del>Approval State Type</del>	<del>A description of the manner in which an Approval Entity's State was set.</del>
<del>APPROVED</del>	<del>Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, TSP, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.</del>
<del>Arranged Interchange</del>	<del>The state where the Interchange Authority has received the Interchange information (initial or revised).</del>
<del>Asynchronous</del>	<del>A two-part communication, involving a request message followed by a separate response message.</del>
<del>Author Rights</del>	<del>The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.</del>
<del>Balancing Authority (BA)</del>	<del>A function associated with an electrical system bounded by interconnection (tie line) metering and telemetry.</del>
<del>Balancing Authority Area (BAA)</del>	<del>The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load resource balance within this area.</del>
<del>Base Profile</del>	<del>The profile associated with the new e-Tag, as originally requested.</del>
<del>Block Start Time</del>	<del>See Tag Start Time</del>

<del>CANCELLED</del>	<del>Final Composite State that results when the e-Tag Author issues a Request Terminate Tag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Authority sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.</del>
<del>COMMFAIL</del>	<del>A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.</del>
Composite State	This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.
<del>CONFIRMED</del>	<del>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.</del>
Correction	A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.
Current Level	<p>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</p> <p>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances ("in-kind" losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</p>
DC Tie Operator	An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.
<del>DELIVERED</del>	<del>Delivery State indicating that a particular Request was distributed to and received by a party.</del>
Delivery State	A value used to provide information about a party's receipt of a particular Request.
<del>DENIED</del>	<del>Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will</del>

	<del>become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.</del>
<del>Electric Industry Registry</del>	<del>Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.</del>
<del>e-Tag</del>	<del>Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.</del>
<del>Exception Profile</del>	<del>A profile containing time specific changes to original profile values</del>
<del>Exchange</del>	<del>Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.</del>
<del>EXPIRED</del>	<del>Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.</del>
<del>Financial Path</del>	<del>Path defining the financially responsible parties of a transaction; detailing ownership of energy across physical movement of energy as well as purely financial.</del>
<del>Generation Providing Entity (GPE)</del>	<del>Merchant selling energy from owned, affiliated, or contractually bound generation.</del>
<del>Implement</del>	<del>Allow energy to be scheduled as described.</del>
<del>IMPLEMENTED</del>	<del>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.</del>
<del>In-Kind Losses</del>	<del>Transmission losses delivered coincident with energy delivery.</del>
<del>Individual Approval State</del>	<del>The Approval State associated with a specific party to the e-Tag.</del>
<del>Individual Delivery States</del>	<del>The Delivery State associated with a specific party to the e-Tag.</del>
<del>Interchange Distribution Calculator (IDC)</del>	<del>NERC tool used to determine curtailments during TLR.</del>
<del>Interchange Transaction</del>	<del>A business exchange between two parties that result in the physical flow of energy from one point to another; a strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, any such flow utilizing Point to Point service shall be considered an Interchange Transaction.</del>
<del>INVALID</del>	<del>Delivery state indicating that a party received a request distribution;</del>

	<del>but felt it was not syntactically or semantically correct</del>
<del>Load Serving Entity (LSE)</del>	<del>Marketer purchasing energy with the intent to deliver to and serve an affiliated or contractually bound load.</del>
<del>Market Entity</del>	<del>PSE, GPE, or LSE</del>
<del>Market Level</del>	<del>Desired energy profile for the transaction; level of market desired flow.</del>
<del>Maximum Reservation Capacity</del>	<del>The commitment of transmission resources to support a particular transaction; typically the same as actual flow.</del>
<del>Minute Boundary</del>	<del>Date/Time value “seconds” are zero.</del>
<del>NA</del>	<del>Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.</del>
<del>OVERRIDE</del>	<del>Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.</del>
<del>PASSIVE</del>	<del>Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.</del>
<del>Passive Approval</del>	<del>An approval that occurred through the expiration of a Request’s evaluation window without an active approval; set automatically by the Authority when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).</del>
<del>Passive Denial</del>	<del>A denial that occurred through the expiration of a Request’s evaluation window without an active approval or denial; set automatically by the Authority when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and TSP.</del>
<del>PENDING</del>	<del>Initial Request State and Approval State.</del>
<del>Physical Path</del>	<del>The source to sink route (via intermediate transmission paths) between generation and load.</del>
<del>Profile</del>	<del>A time/level matrix that defines an energy flow or other related information.</del>
<del>Purchasing-Selling Entity (PSE)</del>	<del>Any entity eligible to apply for an order requiring a Transmitting utility to provide Transmission Services under Section 211 of the Federal Power Act.</del>
<del>QUEUED</del>	<del>Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.</del>
<del>Ramp Start and Stop</del>	<del>The times determined using the e-Tag Start and Stop times in</del>

Times	conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Reliability Authority Service (RAS)	Service used to collect transaction information for analysis, particularly with regard to system security.
Reliability Coordinator (RC)	An entity that provides the reliability assessment and emergency operations coordination for a specific portion of an interconnection.
Reliability Entity	BA, SE, or TSP
Reliability Level	Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.
Request	An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.
Request For Interchange (RFI)	A collection of required data, as defined in Appendix C of the NAESB Coordinate Interchange standard, necessary for the purpose of submitting to the Interchange Authority as an Arranged Interchange.
Request State	The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.
Scheduling Entity (SE)	Scheduling Entity—Reference in the e-Tag for the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.
Security Key	A security token, used to authenticate an entity involved in the e-Tag messaging system
Service	One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority)
Sink	Final point of delivery for a transaction.
Sink Balancing Authority (Sink BA)	The Balancing Authority metered area in which load is located
Source	Initial point of supply for a transaction.
Source Balancing Authority (Source BA)	The Balancing Authority metered area in which generation is located.
State	Either the Request State, Composite State, Individual Delivery State, or Individual Approval State.
Straddle Ramp	Ramp that divides the start ramp duration equally across the profile

	<del>block start or end time.</del>
<del>STUDY</del>	<del>The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.</del>
<del>Synchronous</del>	<del>Message type in which the requesting message is responded to within the same connection.</del>
<del>Tag</del>	<del>e-Tag</del>
<del>Tag Agent Service (Agent)</del>	<del>Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority and to receive State information for these requests.</del>
<del>Tag Approval Service (Approval)</del>	<del>Software component used to indicate individual approval entity responses when requested by Authority Service, as well as submit Profile Changes.</del>
<del>Tag Author</del>	<del>Entity that creates and submits an e-Tag; the caller of the Request NewTag method.</del>
<del>Tag Authority Service (Authority)</del>	<del>Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession</del>
<del>Tag Code</del>	<del>7-Character code used as part of the e-Tag ID to identify a transaction.</del>
<del>Tag ID</del>	<del>Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.</del>
<del>Tag Start Time</del>	<del>The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.</del>
<del>Tag Stop Time</del>	<del>The latest time listed in any part of a tag, including energy, transmission, and loss accounting.</del>
<del>TERMINATED</del>	<del>Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-</del>

	Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).
Termination Time	The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.
Test e-Tag	An e-Tag used for diagnostic purposes; does not represent actual transacted business.
Title Transfer	An exchange of energy ownership; may or may not be associated with a physical movement of energy.
Transaction Information System (TIS)	Transaction Information System — currently implemented as e-Tagging.
Transmission Allocation	Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.
Transmission Customer (TC)	A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.
Transmission Service Provider (TSP)	A registered entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.
Universal Coordinated Time (UTC)	Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).
Valid	Passed syntax checks by an e-Tag Service (i.e. not invalid)
Viewing Rights	The rights of an entity to view transaction details.
WITHDRAWN	Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

<u>Term</u>	<u>Acronym</u>	<u>Definition</u>
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<u>{ Source BA, Sink BA, PSE } Code</u>		<u>Entity Code defined in the Electric Industry Registry</u>
<u>ACTIVE</u>		<u>An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.</u>
<u>Active Approval</u>		<u>An approval or denial that occurred through an entity's deliberate indication of their intent.</u>
<u>After-the-Fact</u>	<u>ATF</u>	<u>A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.</u>
<u>Approval Entity</u>		<u>Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.</u>
<u>Approval Rights</u>		<u>The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.</u>
<u>Approval State</u>		<u>The State communicating an Approval Entity's willingness to implement a particular Request.</u>
<u>Approval State Type</u>		<u>A description of the manner in which an Approval Entity's State was set.</u>
<u>APPROVED</u>		<u>Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, Transmission Service Provider, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.</u>
<u>Arranged Interchange</u>		<u>The state where the Interchange Authority has received the Interchange information (initial or revised).</u>
<u>Asynchronous</u>		<u>A two-part communication, involving a request message followed by a separate response message.</u>
<u>Author Rights</u>		<u>The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.</u>
<u>Authority Service Operator</u>		<u>Responsible for Authority Service report generation and retention and to respond to requests for override - typically the Sink Balancing Authority.</u>

<u>Balancing Authority</u>	<u>BA</u>	<u>The responsible entity that ingrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.</u>
<u>Balancing Authority Area</u>	<u>BAA</u>	<u>The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.</u>
<u>Base Profile</u>		<u>The profile associated with the new e-Tag, as originally requested.</u>
<u>Block Start Time</u>		<u>Represents the start time within a request. For RequestNewTag it is the Tag Start Time</u>
<u>CANCELLED</u>		<u>Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Composite State of the e-Tag changes from CONFIRMED to CANCELLED as soon as the Request becomes APPROVED. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.</u>
<u>Carbon Copy List</u>	<u>CC</u>	<u>An optional list of entities (BA, Transmission Service Provider, or PSE) specified in an e-Tag that are provided with a copy of the e-Tag</u>
<u>COMMFAIL</u>		<u>A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.</u>
<u>Composite State</u>		<u>This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.</u>
<u>CONFIRMED</u>		<u>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.</u>

<u>Coordinated Universal Time</u>	<u>UTC</u>	<u>Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).</u>
<u>Correction</u>		<u>A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.</u>
<u>Current Level</u>		<u>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</u>  <u>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances (In-Kind losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</u>
<u>DC Tie</u>		<u>A DC transmission facility; specifically, one that provides a connection between two different interconnections.</u>
<u>DC Tie Operator</u>		<u>An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.</u>
<u>DELIVERED</u>		<u>Delivery State indicating that a particular Request was distributed to and received by a party.</u>
<u>Delivery State</u>		<u>A value used to provide information about a party's receipt of a particular Request.</u>
<u>DENIED</u>		<u>Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.</u>
<u>Electric Industry Registry</u>	<u>EIR</u>	<u>Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.</u>

<u>e-Tag</u>		<u>Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.</u>
<u>e-Tag Agent Service</u>		<u>Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority Service and to receive State information for these requests.</u>
<u>e-Tag Approval Service</u>		<u>Software component used to indicate individual Approval Entity responses when requested by Authority Service, as well as submit Profile changes.</u>
<u>e-Tag Authority Service</u>		<u>Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession</u>
<u>e-Tag Code</u>		<u>Unique 7 character transaction identifier used as part of the Tag ID.</u>
<u>Exception Profile</u>		<u>A profile containing time specific changes to original profile values</u>
<u>Exchange</u>		<u>Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.</u>
<u>EXPIRED</u>		<u>Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.</u>
<u>Financial Path</u>		<u>Path defining the financially responsible parties of a transaction, detailing ownership of energy across physical movement of energy as well as purely financial.</u>
<u>Generation Providing Entity</u>	<u>GPE</u>	<u>Merchant selling energy from owned, affiliated, or contractually bound generation.</u>
<u>Implement</u>		<u>Allow energy to be scheduled as described.</u>
<u>IMPLEMENTED</u>		<u>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.</u>
<u>In-Kind Losses</u>		<u>Transmission losses delivered coincident with energy delivery.</u>

<u>Individual Delivery States</u>		<u>The Delivery State associated with a specific party to the e-Tag.</u>
<u>Interchange Distribution Calculator</u>	<u>IDC</u>	<u>The mechanism used by Reliability Coordinators in the Eastern interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the distribution Factors for the Eastern Interconnection.</u>
<u>Interchange Transaction</u>		<u>An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. A strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, <b>any</b> such flow between a source and a sink point shall be considered an Interchange Transaction.</u>
<u>INVALID</u>		<u>Delivery state indicating that a party received a request distribution, but felt it was not syntactically or semantically correct</u>
<u>Late</u>		<u>A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>Load Serving Entity</u>	<u>LSE</u>	<u>Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.</u>
<u>Market Entity</u>		<u>PSE, GPE, LSE, or TPSE</u>
<u>Market Level</u>		<u>Desired energy profile for the transaction; level of market-desired flow.</u>
<u>Market Operator</u>		<u>An entity responsible for the implementation of an organized market recognized the FERC.</u>
<u>Maximum Reservation Capacity</u>		<u>The commitment of transmission resources to support a particular transaction; typically the same as actual flow.</u>
<u>Minute Boundary</u>		<u>Date/time value where “seconds” are zero.</u>
<u>NA</u>		<u>Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.</u>
<u>NERC/NAESB Standards</u>		<u>NAESB Wholesale Electric Quadrant Business Practice Standards and NERC Reliability Standards for the Bulk Electric Systems of North America</u>

<u>New e-Tag Request</u>		<u>The initial submittal of Request for Interchange (RFI) to the e-Tag Authority Service</u>
<u>On-time</u>		<u>A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>OVERRIDE</u>		<u>Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.</u>
<u>PASSIVE</u>		<u>Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.</u>
<u>Passive Approval</u>		<u>An approval that occurred through the expiration of a Request's evaluation window without an active approval; set automatically by the Authority Service when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).</u>
<u>Passive Denial</u>		<u>A denial that occurred through the expiration of a Request's evaluation window without an active approval or denial; set automatically by the Authority Service when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and Transmission Service Provider.</u>
<u>PENDING</u>		<u>Initial Request State and Approval State.</u>
<u>Physical Path</u>		<u>The source to sink route (via intermediate transmission paths) between generation and load.</u>
<u>Profile</u>		<u>A time/level matrix that defines an energy flow or other related information.</u>
<u>Purchasing-Selling Entity</u>	<u>PSE</u>	<u>The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.</u>
<u>QUEUED</u>		<u>Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.</u>
<u>Ramp Start Time</u>		<u>The time determined using the Tag Start Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.</u>

<u>Ramp Stop Time</u>		<u>The time determined using the Tag Stop Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.</u>
<u>Reliability Authority Service</u>	<u>RA Service</u>	<u>Service used to collect transaction information for analysis, particularly with regard to system security.</u>
<u>Reliability Coordinator</u>	<u>RC</u>	<u>The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.</u>
<u>Reliability Entity</u>		<u>BA, RC, SE, or Transmission Service Provider</u>
<u>Reliability Level</u>		<u>Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.</u>
<u>Request</u>		<u>An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.</u>
<u>Request For Interchange</u>	<u>RFI</u>	<u>A collection of required data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing authority. For the purposes of this document, an RFI documents the deemed electrical flow between a source point and a sink point.</u>
<u>Request State</u>		<u>The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.</u>
<u>Scheduling Entity</u>	<u>SE</u>	<u>The NERC glossary defines an SE as an entity responsible for approving and implementing Interchange Schedule. For purposes of this document, a Scheduling Entity is referenced in the e-Tag Data Model as the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.</u>
<u>Secondary</u>		<u>A single URL registered in conjunction with an entity's</u>

<u>Service URL</u>		<u>Service URL for a secondary agent or approval service. This secondary service receives a copy of all e-Tag request messages sent by an Authority Service to the Service URL and any callback messages in which the secondary service was identified in the query as the target. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the “Forwarding URL” field is used for this purpose.</u>
<u>Security Key</u>		<u>A security token, used to authenticate an entity involved in the e-Tag messaging system</u>
<u>Service</u>		<u>One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority Services)</u>
<u>Service URL</u>		<u>The main URL registered for an entity’s e-Tag service implementation.</u>
<u>Sink</u>		<u>Final point of delivery for a transaction.</u>
<u>Sink Balancing Authority</u>	<u>Sink BA</u>	<u>The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)</u>
<u>Source</u>		<u>Initial point of supply for a transaction.</u>
<u>Source Balancing Authority</u>	<u>Source BA</u>	<u>The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.)</u>
<u>State</u>		<u>Either the Request State, Composite State, Individual Delivery State, or Approval State.</u>
<u>Straddle Ramp</u>		<u>Ramp that divides the start ramp duration equally across the profile block start or end time.</u>
<u>STUDY</u>		<u>The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.</u>
<u>Synchronous</u>		<u>Message type in which the requesting message is responded to within the same connection.</u>
<u>Tag Author</u>		<u>Entity that creates and submits an e-Tag; the caller of the Request NewTag method.</u>
<u>Tag ID</u>		<u>Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.</u>

<u>Tag Start Time</u>		<u>The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.</u>
<u>Tag Stop Time</u>		<u>The latest time listed in any part of a tag, including energy, transmission, and loss accounting.</u>
<u>Tagging Entity ID</u>		<u>Unique numeric identifier for each tagging entity as defined in the Electric Industry Registry (EIR)</u>
<u>TERMINATED</u>		<u>Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).</u>
<u>Termination Time</u>		<u>The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.</u>
<u>Test e-Tag</u>		<u>An e-Tag used for diagnostic purposes; does not represent actual transacted business.</u>
<u>Time Classification</u>		<u>Assigned at submittal to each e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>Title Transfer</u>		<u>An exchange of energy ownership; may or may not be associated with a physical movement of energy.</u>
<u>Transaction Information System (TIS)</u>		<u>Transaction Information System – currently implemented as e-Tagging.</u>

<u>Transmission Allocation</u>		<u>Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.</u>
<u>Transmission Customer</u>	<u>TC</u>	<u>A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.</u>
<u>Transmission Service Provider</u>		<u>The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.</u>
<u>Valid</u>		<u>Passed syntax checks by an e-Tag Service (i.e. not invalid)</u>
<u>Viewing Rights</u>		<u>The rights of an entity to view transaction details.</u>
<u>WITHDRAWN</u>		<u>Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.</u>

### 1.3 Tagging Terminology

In an abstract sense, ~~Electronic Tagging's~~ this implementation an electronic Transaction Information System has the primary purpose ~~is~~ to create, manipulate, and maintain two objects – e-Tags and Requests. An e-Tag can be thought of as a collection of Requests, bundled together in one package and relating to a single transaction. Requests can be of various types, and each Request contains its own state and approval history. Each approved Request modifies the e-Tag that it is associated with in some way. E-Tags also maintain their own state (called Composite State), independent from the states of the various Requests that make up that e-Tag.

References to “time” in this document mean a specific date/time in most cases; e.g. ~~ramp start time, ramp stop time, e-~~ Ramp Start Time, Ramp Stop Time, Tag start time Start Time, etc.

The remainder of this section contains a list of useful terms and definitions relating to e-Tags and Requests.

**Request** - New e-Tags and changes to existing e-Tags are all initiated with a Request. An e-Tag is the composite result of all ~~APPROVED~~ APPROVED Requests related to that e-Tag. There are six types of requests:

**New e-Tag** – a request to implement a new Interchange Transaction as a physical energy flow, also called a Request for Interchange. An e-Tag that reaches an IMPLEMENTED state will usually transition through the following stages:

1. Request for Interchange – the Request created by the e-Tag Author.
2. Arranged Interchange - once the Authority Service receives the Request.
3. Confirmed Interchange - once the Request is approved.
4. Implemented Interchange – when the current time is past the e-Tag’s ramp start time.

**Curtailement** – a request to limit an energy flow through the limiting of an associated Interchange Transaction

**Reload** – a request to release a limit previously requested through a Curtail Request

**Adjustment** – a Request that modifies energy flow and/or transmission capacity of an Interchange Transaction in order that such a change may be implemented and resources committed

**Termination** – a Request that either reduces energy flow and transmission capacity of an e-Tag to zero for the life of the e-Tag prior to its start so that such a transaction is not started (CANCEL) or reduces energy flow and transmission capacity of an e-Tag to zero starting at a time indicated in the termination Request

that is after ramp start time and continuing for the life of the transaction (TERMINATION)

**Extension** – a Request that includes energy flow and/or transmission capacity for unscheduled hours of an Interchange Transaction, in order that such a change may be implemented and resources committed

**Submission time** – the time at which an e-Tag Author submits a Request to the Authority Service for processing ~~as~~. The submission time is determined by the Authority Service. Requests are categorized by submission time into one of three ~~categories~~ Time Classifications based on the ~~NERC/NAESB Interchange Standards'~~ timing tables. ~~These categories are:~~  
in NERC/NAESB Standards:

~~1. On-Time,~~

1. ~~-time~~
2. ~~Late, and~~
3. ~~After-The-the-Fact (ATF).~~

**Request State** – the overall status of the Request, based on the processing of the Request. Requests are categorized by Request State in the following ways:

**PENDING** - initial Request State

**WITHDRAWN** – final Request State that results when a Request Author submits a WithdrawRequest before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

**APPROVED** – final Request State that results when all entities with approval rights over a Request actively approve it or when no entities with approval rights actively deny the Request, all reliability entities approve the Request, and the Request's assessment period expires.

**DENIED** – final Request State that results when one or more Approval Entities set their Approval State to DENIED and the Request's assessment period expires.

**EXPIRED** – final Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.

**Individual Delivery States** – indicates the successful or unsuccessful transfer of a Request to an entity. The possible Delivery States are:

**QUEUED** – the Request is scheduled for delivery.

**INVALID** – the Request was perceived as invalid by the receiving entity and rejected.

**COMMFAIL** – the Request was undeliverable due to communication problems.

**DELIVERED** – the Request was successfully delivered.

**Individual Approval States** – indicates the intent of an entity to implement a Request. The possible Approval States are:

**NA** – no state is applicable, as the Request has not yet been successfully delivered to the entity or the entity does not have approval rights.

**PENDING** – no indication has been made to show whether the implementation of the Request is supported or not.

**APPROVED** - an indication of supporting the implementation of the Request.

**DENIED** - an indication of opposing the implementation of the Request.

**STUDY** - an indication that the Approval Entity was uncertain whether or not to support or oppose the Request. This state is treated the same as PENDING when the assessment period ends.

**EXPIRED** – an indication that an Approval Entity who is required to actively set Approval State did not actively set Approval State to APPROVED or DENIED before the assessment period ended.

**Individual Approval State Types** – indicates how an entity's state was assigned. The possible Approval State Types are:

**Active** – an Approval Entity actively selected The Approval State.

**Passive** – the Approval State was passively selected due to a time elapse or other non-interactive manner.

**Overridden** – the Approval State was actively ~~selected~~modified by the Sink Balancing Authority via its Authority Service acting on the behalf of an Approval Entity that was unable to act on their own.

**Composite State Types** – indicates the overall state of an e-Tag. The possible Composite States are:

**CONFIRMED** –Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is greater than the current time.

**IMPLEMENTED** – Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is less than or equal to the current time.

**CANCELLED** – Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED with the termination time in the Request set to the ~~block-start time~~ Tag Start Time of the e-Tag. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.

**TERMINATED** – Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED with the termination time set after the ~~block-start time~~ Tag Start Time of the e-Tag. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its ~~block-start time~~ Tag Start Time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).

**PENDING** - Initial Composite State

**WITHDRAWN** – The e-Tag Composite State transitions to WITHDRAWN when the new e-Tag creation Request transitions to WITHDRAWN.

**DENIED** – The e-Tag Composite State transitions to DENIED when the new e-Tag creation Request transitions to DENIED.

**EXPIRED** - The e-Tag Composite State transitions to EXPIRED when the new e-Tag creation Request transitions to EXPIRED.

## 1.4 System Concepts

The functional requirements address the following basic information and data exchange needs:

- Initial creation of an e-Tag Request representing the transaction,
- Dissemination of the e-Tag Request to all parties directly involved in the transaction,

- Collection of Approval States from all parties with approval rights,
- Forwarding of the Request and e-Tag to appropriate entities and tools, and
- Modifications to the e-Tag throughout its lifetime.

This document approaches the functional requirements for electronic ~~Tagging~~ tagging by defining four services: the Agent Service, the Authority Service, the Approval Service, and the Reliability Authority Service.

The functionality that must be supported by each of these services and the entity responsible for providing for these services are defined. There are no restrictions with regard to who may provide these services (i.e., the responsible entity or any one of a number of third-party service providers) nor any restrictions on which services (or all) that a third-party service provider could offer. **Under no circumstances shall a provider of any of these services require any other service provider to implement additional features or functionality beyond these specifications as a condition to properly performing the obligations associated with that service.**

This specification is accompanied by an XML schema. The schema is intended to reflect the specification. Should the specification and schema conflict, the specification is the ruling document.

## 1.4.1 System Architecture

### 1.4.1.1 Agent Service

The Agent Service provides the ability for initial creation of an ~~electronic e~~-Tag and the transfer of that information to the appropriate Authority Service. Purchasing-Selling Entities (PSEs) and all other e-Tag Authors are responsible for providing this service directly or by arranging with a third party to provide this service as their agent. E-Tags created by the Agent Service are forwarded to the Authority Service associated with the Sink Balancing Authority (Sink BA). The Agent Service provides a mechanism for the e-Tag Author to view the Approval State of its transactions via an unsolicited notification mechanism. The Agent Service also provides facilities for the e-Tag Author to make Corrections to e-Tags prior to confirmation, as well as request a Profile Changes to any of their e-Tags following confirmation. These corrections and modifications are also sent and processed via the Authority:

~~The Agent Service is referred to throughout this document as Agent.~~

### 1.4.1.2 Authority Service

The Authority Service is the focal point for all interactions with an e-Tag and maintains the single authoritative “copy of record” for each e-Tag received. Every Sink Balancing Authority is responsible for ~~providing this service directly or by arranging with a third party to provide this service as its agent~~ registering an URL of an Authority Service. The Authority Service forwards all valid received e-Tag Requests to ~~the Approval Service associated with~~ each entity identified in the transaction as having “approval” or “viewing” rights over that Request (see section 3 for distribution list determination), and collects approvals/denials issued by these Approval Services. Based on time and/or the messages received from the Approval Services, the Authority Service arbitrates and sends the final disposition of the Request to ~~the originating Agent and all Agent and Approval Services associated with the transaction, and to the sink BA’s designated forwarding location (e.g., RAS or BA’s Reliability Coordinator)~~ each entity in the distribution list. The Authority Service also provides the capability for both Agent and Approval Services to interrogate the current Approval State of any transaction request on demand.

~~The Authority Service is referred to throughout this document as Authority.~~

### 1.4.1.3 Approval Service

The Approval Service receives e-Tag Requests submitted by ~~Agents~~ Agent Services via the appropriate Authority Service. The Approval Service also provides a means for an entity to receive notification of transactions in which they are involved, as well as send approve or deny responses to an ~~Authority’s~~ Authority Service’s presentation of a valid Request (if they have approval rights over the Request). Additionally, the Approval Service allows entities to curtail or otherwise modify the profile of an existing e-Tag (if they have rights to do so). Balancing Authorities, Transmission Service Providers, and Purchasing-Selling Entities are responsible for providing this service directly or for arranging with a third party to provide this service as their agent. Finally, Transmission Service Providers may use the Approval Service to issue corrections or adjustments.

~~The Approval Service can be referred to throughout this document as Approval.~~

### 1.4.1.4 Reliability Authority Service

Reliability Authority Services receive all Requests from ~~Authorities~~ Authority Services. These e-Tags inform the Reliability Authority Service of the expected flows a transaction will create, and are used by Reliability Coordinators to mitigate constraints should the need arise.

The Reliability Authority Service can be referred to throughout this document as RASRA Service.

## 1.4.2 Tag Identification

All e-Tags and e-Tag creation Requests shall be uniquely identified by an e-Tag ID. Electronic communications between Agent, Authority, and ~~Approvals~~ Approval Services shall require the association of an additional Security Key or Keys to control all

interactions related to a given transaction. The following subsections describe the requirements for the creation of the e-Tag ID and Security Key.

### 1.4.2.1 E-Tag IDs

Every transaction shall be identified by a unique e-Tag ID based on key attributes of the transaction as specified in the Data Model:

- Source Balancing Authority Entity Code
- PSE Entity Code (e-Tag Author PSE)
- Unique transaction identifier (e-Tag Code)
- Sink Balancing Authority Entity Code

The “Source Balancing Authority” shall be defined as the host Balancing Authority in which the generation is located. The “Sink Balancing Authority” shall be defined as the host Balancing Authority in which the load is located. The “e-Tag Author PSE” shall be defined as the PSE who is creating and submitting the ~~new~~New e-Tag Request to the Authority Service.

Since this e-Tag ID and the contents of the e-Tag contain potentially commercially sensitive information, all ~~components of the e-Tagging Information System~~ Tag services shall treat such information as confidential.

All services shall reject any attempt to submit as new an e-Tag ID that is identical to an existing e-Tag creation Request’s e-Tag ID for a period of one (1) year from the stop date and time associated with the existing e-Tag. ~~Agents~~ Agent Services shall be required to ensure that each e-Tag ID is unique for a period of not less than one (1) year from the stop date and time associated with the last transaction that was assigned that e-Tag ID.

### 1.4.2.2 Security Keys

The electronic exchange of e-Tag information shall require the assignment of unique “Security Keys” to be associated with the transaction. Security Keys control communication between the Agent, Authority, Approval, and ~~RASs~~ Reliability Authority Services. The Security Key is a unique 12 character alphanumeric (0–9, A–Z, a–z; case sensitive) security token.

The Agent generates a unique Security Key to associate with the e-Tag at the time of submission. All subsequent messages exchanged between the Agent and ~~the~~ Authority Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the e-Tag Author’s Agent Service.

The Authority Service shall also generate one unique Security ~~Keys~~ Key for each entry in the distribution list to be associated with the e-Tag on the initial ~~transmission~~ distribution of the e-Tag ~~to each of the appropriate Agents or Approvals~~. All subsequent messages exchanged between the Authority and ~~a given~~ Approval Services in regard to the e-Tag

shall refer to both the e-Tag ID and Security Key assigned by the Sink Balancing Authority's Authority Service.

In certain situations, Security Keys can exist independent of e-Tag IDs (such as the Get e-Tags and Get e-Tag IDs requests). Those situations will be described in detail in the appropriate sections of this document.

The Security Key must either be random or have the appearance of randomness. Although schemes may be used to generate a key, these schemes must not be obvious to the interested observer (for example, APR05991240X is obviously a date and time, but a ciphered version of this, KYZ71434450H, might not be). The Security Key must be considered a security mechanism, and as such, must not be easily deducible by parties lacking first-hand knowledge of the specific Security Key generation mechanism employed by the system.

It should be noted that each Authority Service is assigned by NERC a unique Security Key for interaction with the IDC. This key is only to be used for communication with the IDC, and must be kept confidential. This key secures communications from the IDC to each Authority Service as well. NERC will notify each registered Authority Service with that ~~Authority's~~ Authority Service's unique Security Key to be used in all messages between the IDC and Authority Service.

### 1.4.3 Test e-Tags

An e-Tag can be designated as a ~~Test e-Tags are e-Tags used~~ for the purpose of troubleshooting a system or component of the system. All ~~services (Tag Agent, Approval, and Authority, and Approval)~~ Services shall accept and process Test e-Tags and in an identical fashion to all other e-Tags, with the following exceptions:

- Viewing applications MUST indicate to the user that the e-Tag is a Test e-Tag.
- Test e-Tags do not require an approving party to evaluate the e-Tag within the Assessment Time as defined in NERC/NAESB Standards.
- Test e-Tags must not be treated as actual e-Tags (the information contained within a Test e-Tag must not be used to make any business decisions).
- The Authority Service shall not initiate the forwarding of these test e-Tags to the RASRA Service at any time.
- Test e-Tag Requests always transition to a Request State of APPROVED on expiration of the assessment period and no approval entities have denied the Request or when all approval entities have approved the Request.

In addition, the following rules must be observed with regard to test e-Tags:

- Test e-Tags must ONLY be used for troubleshooting purposes. System ~~Development, Training~~ development, training, and ~~Demonstration~~ demonstration, as well as any other non-troubleshooting related need must NOT utilize the Test e-Tag feature.
- A particular PSE (as listed in the ~~Electric Industry Registry~~ EIR) may only issue a total of ten (10) Test e-Tags per clock hour. Any Test e-Tag submissions exceeding this number may be rejected at the option of the service being sent the Test e-Tag.

- Test e-Tags may be rejected at the option of the service provider if they are sent during the last twenty minutes of a clock hour (i.e., xx:40 – yy:00).
- 

Test e-Tags must not reflect authorship that does not match the listed service affiliation in the [Electric Industry Registry EIR](#). If a Test e-Tag is sent from an external system to another system, and the e-Tag Author is a registered user of the receiving system, the receiving system may reject the e-Tag. For example, if PSE XXX is registered to use vendor X, and a message comes in from vendor Y claiming to be authored by PSE XXX, vendor X may reject the message.

## 1.4.4 Communications

All e-Tag messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, procedures on remote machines are invoked, passing any needed data as input parameters to the function or method. When the function is complete, it returns the result of its processing.

### 1.4.4.1 Method Types

The e-Tag ~~uses~~ [services use](#) various types of methods for various purposes. The methods can be broken up into the following categories.

#### 1.4.4.1.1 Requests

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

#### 1.4.4.1.2 Request Distributions

Request Distributions are the methods used to send requests to all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

#### 1.4.4.1.3 Actions

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### 1.4.4.1.4 Information Distributions

Informational distributions are the methods used to send information related to the State of a particular Request or set of transactions. These are sent to entities to alert them of particular Request's implementation or withdrawal, as well as specific entities approvals and denial of a Request.

#### 1.4.4.1.5 Queries

Query methods are used to search and recover data from an Authority [Service](#) or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods,

meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query.

#### 1.4.4.1.6 Callbacks

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

#### 1.4.4.2 Message Size Limitations

In order to ensure reliable operation of the e-Tag systems, the following limitations of message size are to be observed:

- Any RequestNewTag or RequestProfileChange specifying a duration greater than 33 days in length may not have a Content-Length greater than 512000 characters. Agent systems should not issue such Requests, and Authorities should reject such Requests if they are received.

### 1.4.5 Financial and Physical Paths

Paths define the flow of both energy flow and fiduciary responsibility. Financial ~~path~~Path components are referred to as **market segments**, while ~~physical-path~~Physical Path components are called **physical segments**.

A ~~Physical-Segment~~physical segment may be one of three types:

- **Generation** that is supplying energy for delivery,
- **Transmission** that is wheeling the energy from one point to another, and
- **Load** that is consuming the delivered energy.

Market ~~Segments~~segments are financial responsibilities for the receipt and/or delivery of the energy. A ~~Market Segment~~market segment typically contains ~~Physical-Segments~~physical segments (illustrating holding of title across physical movement of energy), but may contain no such ~~Physical-Segments~~physical segments (illustrating a non-physical title-holder). Physical ~~Segments~~segments must be contained within ~~Market Segments~~market segments.

An e-Tag may have only one ~~Generation~~generation segment and one ~~Load-Segment~~load segment. When ordered, these segments must be indicated as the first and last physical segments in the path, respectively.

For a detailed discussion of Paths and how they function, please see **Section 6.2.2, Market Segments**, and **Section 6.2.3, Physical Segments**.

### 1.4.6 Profile Descriptions

~~Profile-Sets~~Profiles define the level at which transactions should run, as well as the factors that set those levels. For detailed discussions on how profiles function please see section **6.1.4**.

In general, a profile will have three levels

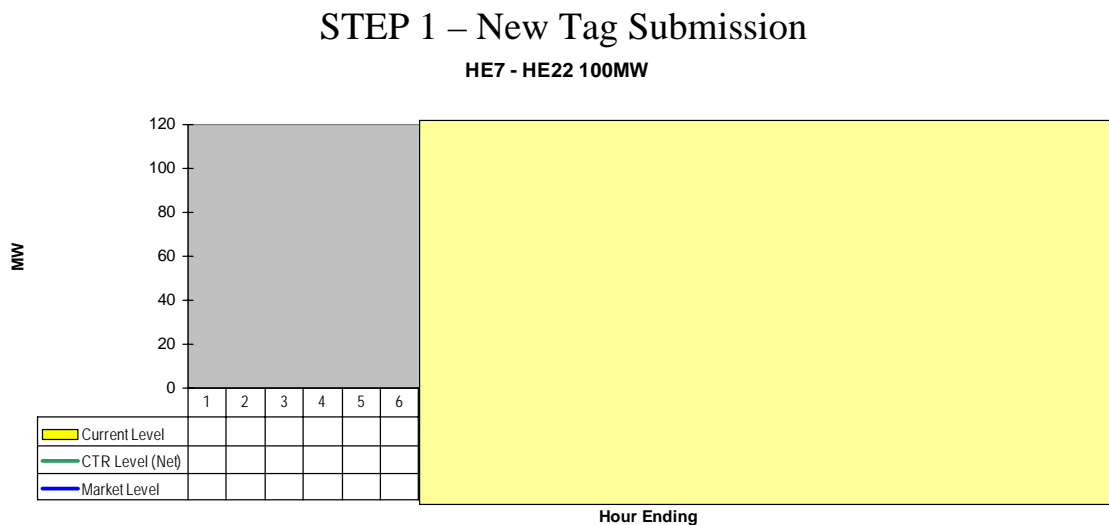
- The energy flow
- The maximum level at which the energy may reliably flow (default is unlimited)

- The transmission capacity committed to the transaction by the e-Tag Author as a Transmission Allocation

Tag Authors can modify the energy profile up or down without exceeding the Transmission Allocation. Should a curtailment occur for reliability reasons, then the reliability limit must be adjusted to become the new maximum level. The e-Tag Author can modify the energy profile on the e-Tag up or down even while under curtailment, but the reliability limit will always be the maximum level. The lowest of the reliability limits or the market level will indicate the actual flow on the e-Tag. For DYNAMIC type e-Tags, the e-Tag author, Source BA, or Sink BA may make market level profile adjustments after-the-fact (to reflect metered values) but may not adjust the transmission allocation profile. Any previously existing reliability limits must be cleared thus achieving both a reload and a profile change with one profile change request.

Profiles may optionally reflect ramp start and stop durations for each profile block. The ramp stop duration will be ignored on all blocks except for the last profile block. Only the ramp start duration will be used in energy level calculations for all other profile blocks. All ramps imply straddle ramps. Instantaneous ramps are indicated by a zero minute ramp duration. The ramp start and stop data represents minutes over which the generator will increase or decrease generation from the previous block level to the current block level. The ramp beginning and end times for each profile block can be calculated based on the ramp duration and profile block start and end times.

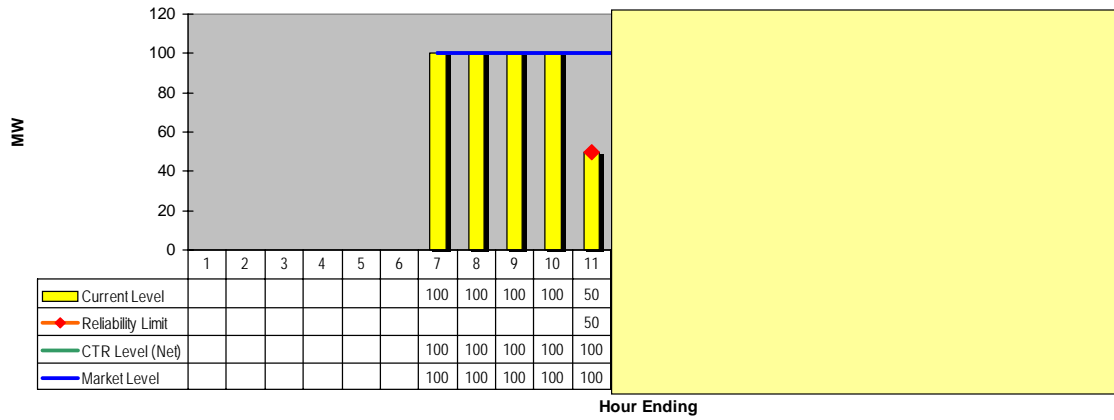
The following diagrams illustrate the relationship between these levels:



In Step 1, the e-Tag has been submitted, but has not yet run. The yellow overlay indicates points in the future.

## STEP 2 – Curtailment

Curtailed to 50MW at 10am



In Step 2, the e-Tag has been running and is curtailed.

## STEP 3 – Curtailment Continues

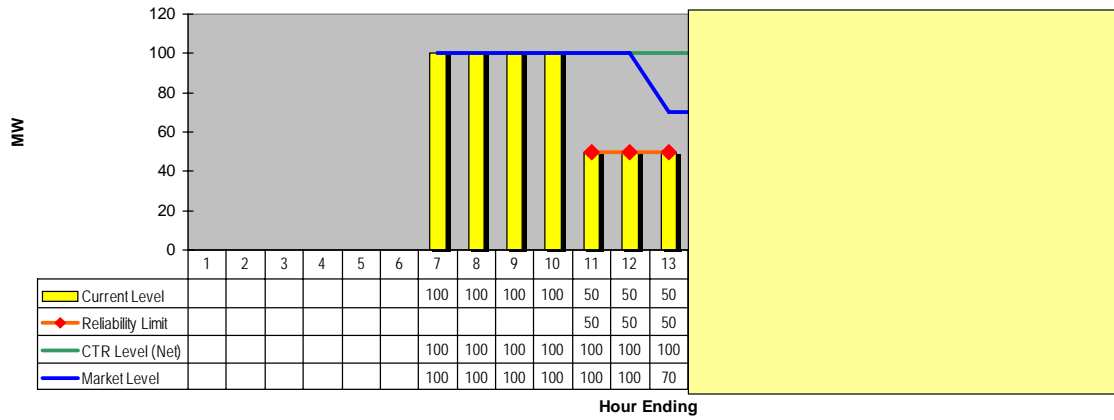
Reissued at each hour



In Step 3, the Curtailment continues and is reissued twice.

### STEP 4 – Tag Author Sets Reload Level

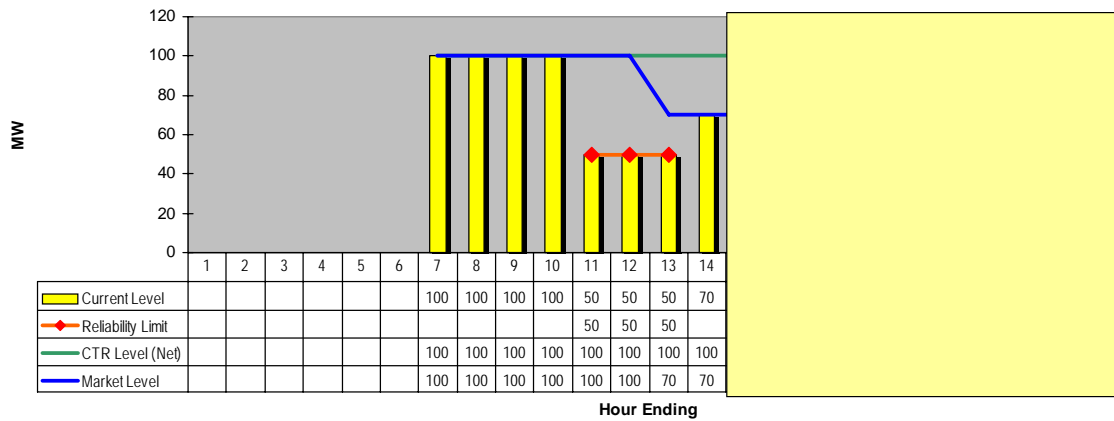
70MW until HE 18



In Step 4, the e-Tag Author elects to limit their transaction to a maximum reload of 70MW until HE 18.

### STEP 5 – TLR Released, Tag Partially Reloaded

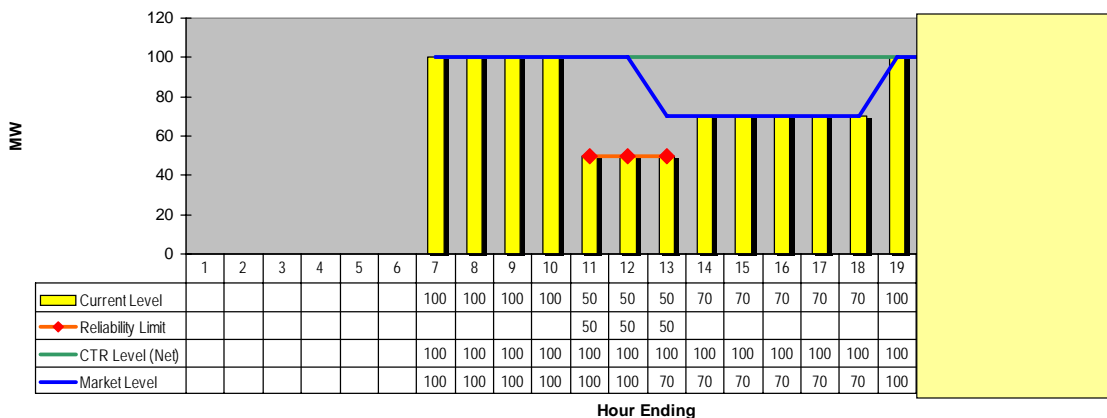
Reloaded to 70MW



In step 5, the e-Tag is Reloaded by the RC/BA to the 70MW level as specified.

### STEP 6 – Tag Fully Reloaded

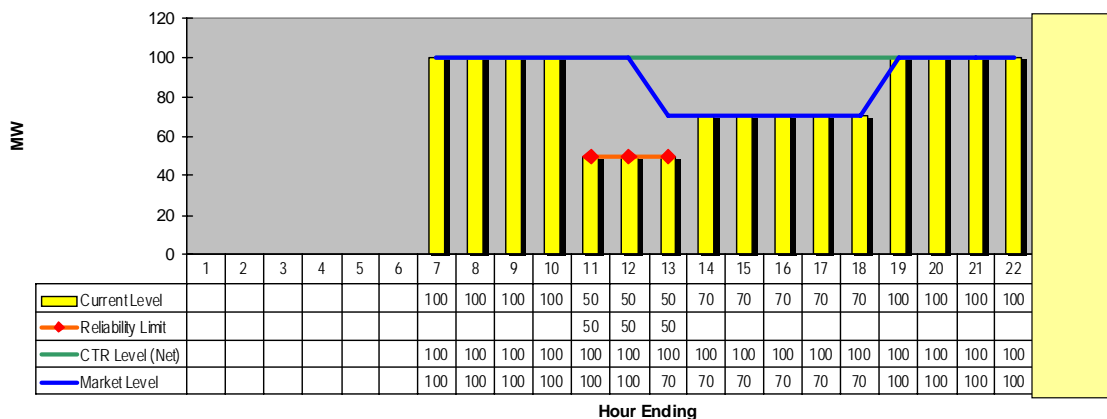
70MW until HE 18



In Step 6, the e-Tag is reloaded by the RC/BA to its previous 100MW level as specified.

### STEP 7 – Transaction Complete

70MW until HE 18

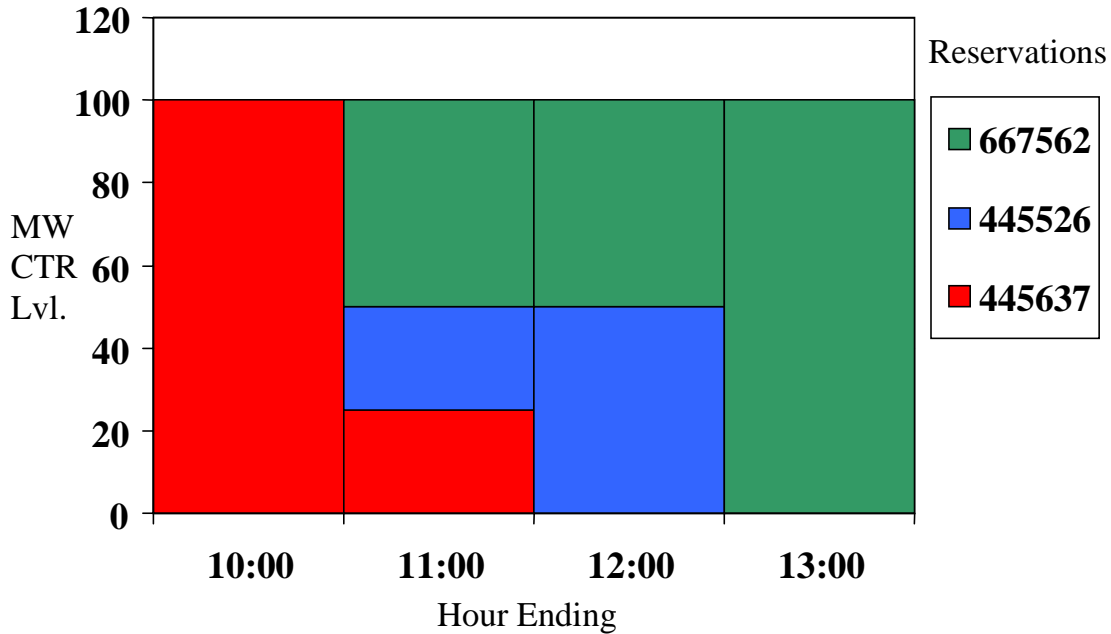


In Step 7, the e-Tag has completed.

## 1.4.7 Transmission Allocation

Transmission Allocation describes the manner in which an e-Tag Author specifies which transmission reservations will be used to support the capacity committed in a Transmission Service Provider’s associated profile. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.

In the example below, an entity is supplying a total of 100 MW of transmission capacity over four hours by using three different reservations in combination:



For more detail on this topic, please see **Section 6.2.4, Transmission Allocations**.

### 1.4.8 Timing Requirements

To enforce Request submission and evaluation timing requirements, the Authority Service shall maintain system time to an accuracy of one (1) second traceable to the National Institute of Standards and Technology (NIST). Approval and AgentsAgent Services are encouraged to keep their time synchronized in this manner as well.

All times communicated through an e-Tag shall be noted in Universal Coordinated Time (UTC). User interfaces and local systems may reflect local time, however, any system using time zones other than UTC must properly convert those times into UTC prior to communicating with other systems.

NERC/NAESB Standards provide details on the manner in which timing requirements should be implemented.

#### 1.4.8.1 Approval of Reliability Changes

All **profile** changes that impact the Reliability Limits-Level profile (i.e., curtailments and reloads) must be actively approved in order to be implemented. Profile changes will not be implemented if either actively or passively denied.

## 1.4.9 Tag Auditing

Each service shall be responsible for keeping audit information describing its interactions with other services. These requirements are described below.

### 1.4.9.1 Message Rejection Log

Any service that rejects a message as containing a ~~Fault~~fault or an ~~Error~~error must log the type of rejection, the date/time of the rejection, the sending entity (if identifiable), and the e-Tag ID (if identifiable). This information must be kept available by written request for a minimum of ninety (90) days after the rejection.

### 1.4.9.2 Historical e-Tag Archive

Every service shall keep available for retrieval every e-Tag and associated messages received by the service until ninety (90) days past the e-Tag's stop date/time.

~~Authorities~~Authority Services must have this information available to Approval and Agent ~~systems~~Services through standard e-Tag querying mechanisms throughout the ninety-day period, as well as through written request by other parties who may require data but not be participants listed on the e-Tag (i.e., NERC). ~~Agent and Approvals~~Approval Services must have these e-Tags available by written request. Approval and Agent ~~systems~~Services making a request from the Authority Service for a certain time range must be provided with all e-Tag and associated messages associated with the requestor for that time range.

Messages sent from an authority service to a Secondary Service URL shall be kept for a minimum of seven (7) days from the time that the message was sent.

### 1.4.9.3 Statistics

Every service shall maintain statistical information as defined below. This information must be logged, as it occurs, NOT after the fact. In this manner, services may accurately reflect data before it is modified through overrides or updates. This information must be available by written request for a minimum of ninety (90) days in the form of reports. These reports must be written based on the requests processed in one week (00:00 UTC Sunday to 23:59:59 UTC Saturday). This information must be available to parties who may require data but not be participants to any specific e-Tag (i.e., NERC).

- Number of LATE Requests, by requester
- Number of ATF Requests, by requester
- Number of return values of INVALID, by entity
- Number of return values of COMMFAIL, by entity
- Number of returned Faults, by entity.
- Number of Request Approval State Type of PASSIVE, by approver

#### 1.4.9.4 Authority Service Off-Line Archive

All ~~Authorities~~ Authority Services shall archive all message dialogues (all received and issued messages and their associated responses) ~~associated with a particular e-Tag-~~, as follows:

- These message ~~logs~~ dialogues need not be available for online query, ~~however, upon written request from NERC, Authority operators~~
- Authority Service Operators must ~~be able~~ have the ability to supply written reports ~~within a reasonable amount of time (within one working week)~~ listing message traffic for a particular entity or transaction. ~~This information shall be kept from the implementation of the 1.7 Specification forward until such time this requirement is removed~~ within a reasonable amount of time (e.g., within seven business days).
- Authority Service Operators must retain message dialogues as specified in NERC/NAESB standards.

#### 1.4.10 Rounding

MW values specified in e-Tag profiles must sometimes be integrated into MWh values across appropriate schedule intervals. E-Tag profiles that start or stop within schedule intervals may result in fractional MWh values being calculated. These MWh values must be rounded to the nearest whole MWh (< .50 down, >= .50 up).

Calculation of aggregated data such as hourly, daily, monthly, and e-Tag totals must be performed in accordance with applicable NERC/NAESB ~~NERC~~ Coordinate Interchange Standards.

#### 1.4.11 Carbon Copy List

E-Tags may optionally contain a list of entities (BA, TSP Transmission Service Provider, or PSE) that are provided with a copy of the e-Tag. This list is set as part of an e-Tag creation request and can't be changed by subsequent corrections, adjustments, etc. E-Tag Authors may select up to five entities for inclusion in this list. These entities are provided with a copy of the e-Tag and any subsequent changes in the same manner as which entities in the Market Financial Path are provided with copies of the e-Tag. These entities will not be given approval rights and must not appear in any other role in the e-Tag. For entities of type PSE, all messages will be sent to the registered agent URL. For entities of type BA and TSP Transmission Service Provider, all messages will be sent to the registered approval URL.

## 1.5 Training Requirements

### 1.5.1 User Guides

Anyone developing e-Tag software must provide a ~~User Guide~~user guide, which shall describe, at a minimum, the following information:

- The target user (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

### 1.5.2 User Education

Anyone developing e-Tag software must develop education programs for the use of their software. Education programs must cover the following topics:

- Who the target user is (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

Education programs may be developed for self-study, online education, or other means. The developer may offer education ~~Workshops~~workshops; however, the cost of such workshops may be borne by the software customer.

## 1.6 Functional Concepts

### 1.6.1 Initiating a Request

Requests are initiated in order to create or modify e-Tags.

#### 1.6.1.1 Submitting a New e-Tag Request

Submitting a New e-Tag Request is the process in which an e-Tag Author presents a completed RFI/e-Tag to the e-Tag ~~system~~ Authority Service for processing. The e-Tag Author uses its Agent Service to write the e-Tag and then communicate that e-Tag as a request to the Authority Service. The Authority Service then processes the transaction and manages the state of the ~~new~~ New e-Tag Request. ~~Upon~~ Using the time of receipt and the Ramp Start Time, the ~~Authority~~ Authority Service sets the ActOnByTime and the TimeClassification (OnTime, Late, or ATF) based on the ~~time of receipt, the ramp start time of the RFI, and the~~ NERC/NAESB Interchange Standard timing tables. A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1.

#### 1.6.1.2 Submitting a Correction Request

The e-Tag Author makes e-Tag Corrections when a portion of the e-Tag data must be changed. A correction to an e-Tag can only occur prior to that e-Tag attaining a Composite State of CONFIRMED or IMPLEMENTED. During the New e-Tag Request approval process, in which parties evaluate the transaction for ability to implement, the e-Tag Author may notice or be informed of a needed change in the e-Tag. That change may be written and submitted using the Agent Service.

The correction resets the Request State for entities affected by the correction, distributes the correction, and requires entities affected to re-evaluate the Request using the corrected data. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables. Unaffected entities need not re-approve the e-Tag. Affected entities are defined in section 1.6.2.2.

Transmission Service Providers (~~TSPs~~) may also submit a correction. In this case, the ~~TSP~~ Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated ~~TSP~~ Transmission Service Provider (TPCode). The ~~TSP~~ Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) and the profile may not be extended. ~~TSP~~ Transmission Service Provider created Correction Requests are unilateral and require no approval by any other entity. Upon receipt of a corrections submittal from a ~~TSP~~ Transmission Service Provider, the Authority Service does not reset the ActOnByTime or TimeClassification but will redistribute the correction.

NERC/NAESB Standards provide additional details on the manner in which corrections should be made.

### 1.6.1.3 Submitting a Profile Change Request

Changes to a Profile ~~Changes~~ can be requested by several different parties and for three primary reasons:

- To implement market-based modifications to the Transmission Allocation profile.
- To implement market-based desires to modify or extend energy flow
- To implement reliability-based desires to modify energy flow (i.e., curtailments and reloads)

When any of the above possible Profile Changes ~~reasons~~ are needed, the party wishing to implement ~~the~~ a change to a Profile ~~Change~~ will use their appropriate e-Tag service to write and send ~~the~~ change Request to the Authority Service. The Authority Service then processes the transaction Request and manages the state of the Request. When a profile change is requested for reliability purposes (i.e. curtailment or reload), the Request author must submit a modified profile at the POR or POD of any single physical segment; the Authority Service will then calculate the approximate losses for all other profiles, if applicable.

When an e-Tag Author requests a profile change, they must provide all appropriate profiles necessary to reflect appropriate losses.

## 1.6.2 Request Distribution

### 1.6.2.1 Distributing a New e-Tag Request

When an agent submits a ~~new~~ New e-Tag ~~request~~ Request to an Authority Service, the Authority Service distributes copies of that e-Tag to the transaction's participants. Transaction participants include all entities specified in the physical and market path, entities selected in the ~~carbon-copy~~ Carbon Copy list, and any other entities as specified in the NERC/NAESB Interchange Standards. The rights associated with each participant are defined in NERC/NAESB Standards. Entities in the ~~carbon-copy~~ Carbon Copy list must not be given approval rights.

The Authority Service provides a copy of the new e-Tag to each participant, along with a description of their role in the transaction. Each receiving Approval then processes the Request and solicits approval of the Request from its using participant.

### 1.6.2.2 Distributing a Correction Request

Corrections are distributed to all entities that received the original e-Tag. Entities specifically impacted by the correction are asked to re-evaluate the e-Tag based on the corrected information. Impacts of corrections are defined in the following table.

Correction Type	Impacted Entity
<i>Any allowable correction to a Physical Generation Segment</i>	<i>Source BA, Generation Providing Entity</i>

<i>Any allowable correction to a Physical Transmission Segment or Transmission Allocation</i>	<i>Transmission Service Provider, Scheduling Entities (Intermediate Bas), Transmission Customer</i>
<i>Any allowable correction to a Physical Load Segment</i>	<i>Sink BA, Load Serving Entity</i>
<i>Any allowable correction to a Market Segment</i>	<i>Purchasing-Selling Entity</i>
<i>Any allowable correction to any product code (energy or transmission) made by the e-Tag Author</i>	<i>In addition to the above, the last Physical Transmission Segment's <u>TSP</u> <u>Transmission Service Provider</u>, LSE, Sink BA</i>
<i><u>TSP</u> <u>Transmission Service Provider</u> correction</i>	<i>No re-evaluation required, no approval required</i>

Corrections are not permitted to add or remove participants from an e-Tag.

Approval Rights over the transaction remain as established in NERC/NAESB Standards. Entities impacted by corrections that are required to approve the transaction must be alerted to the correction. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables.

NERC/NAESB Standards contain additional information regarding the processing of corrections.

### **1.6.2.3 Distributing a Profile Change Request**

Profile Change Requests are distributed to all entities that received the original e-Tag. Depending on the type of change requested, the parties required to approve the Request may vary. NERC/NAESB Standards describe the entities required to evaluate the modification and the criteria they should use in their evaluation.

## **1.6.3 E-Tag Request Actions**

### **1.6.3.1 Approving and Denying Requests**

Approval entities will use a variety of methods, consistent with NERC/NAESB Standards, to determine whether an e-Tag Request should be approved or denied. Approval entities must actively approve or deny all requests within a specified Request evaluation period.

NERC/NAESB Standards provide details on the timing requirements under which requests should be made and evaluated.

When an approval entity decides to approve or deny a Request, the entity utilizes its Approval action to change the Approval State to "APPROVED" or "DENIED".

An approval entity has the option to change its Approval State at will, until the Request State has reached a final state.

If the entity wishes to indicate that it is reviewing a Request, but will not have an answer for some time, the entity can elect to change its Approval State to “STUDY”. The action of placing an e-Tag in a “STUDY” state does not extend the approval window. The Approval Entity must still act in a timely manner to set the Approval State to “APPROVED” or “DENIED” before the Request evaluation deadline has passed.

The Authority [Service](#) collects these approval States and uses the indicated dispositions to determine transaction request implementation and rejection. NERC/NAESB Standards describe the manner in which an Authority [Service](#) determines the resolution of a particular pending Request. Once an e-Tag has reached a final state, all parties are informed of the resolution

### **1.6.3.2      *Withdrawing a Request***

For both New e-Tag Requests and Profile Change Requests, the Request initiator may withdraw the Request at any time up until the Request has reached a final state by submitting a WithdrawRequest message. If a Request has already been APPROVED, then that Request cannot be WITHDRAWN. In order to withdraw a Request, the initiator uses its Agent [or Approval Services](#) to send a request to the Authority [Service](#) to withdraw the Request. Upon timely receipt of the WITHDRAW request, the Authority [Service](#) will consider the Request WITHDRAWN and process that event accordingly, distributing notification of the Request State change to all parties.

The only party that may withdraw a Request is the original initiator of a Request or holder of the initiator’s Security Key. No Request may be withdrawn without a valid Security Key.

### **1.6.3.3      *Canceling a Request***

Should an e-Tag’s author wish to back out of a CONFIRMED e-Tag, that entity must submit a RequestTerminateTag message to the Authority [Service](#). NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the cancellation request is approved, the Composite State of the e-Tag is set to CANCELLED and processed accordingly with both the energy and transmission allocation profiles set to zero.

### **1.6.3.4      *Terminating an e-Tag***

Should an e-Tag’s author wish to back out of an IMPLEMENTED e-Tag, that entity must submit a RequestTerminateTag message that includes a valid termination time. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the termination request is approved, the Composite State of the e-Tag is set to TERMINATED at the termination time and processed accordingly. The energy and transmission allocation profiles will be set to zero effective at the specified start time.

Should an entity wish to correct an invalid ATF e-Tag, that entity must submit a RequestTerminateTag. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If approved, the Composite State of the e-Tag is set to TERMINATED immediately and processed accordingly with both the energy and transmission allocation profiles being set to zero.

## 1.6.4 Information Distribution

### 1.6.4.1 *Distribution of Request Approval State*

When a significant status change occurs (as defined in section 3.6.4.1), the Authority Service responsible for the e-Tag will notify all parties of that change. By doing so all parties are advised of the current disposition of the e-Tag. In the case of entities electing to deny a New e-Tag Request, the e-Tag Author may attempt to correct the e-Tag in order to satisfy the needs of the denying party.

### 1.6.4.2 *Distribution of Request Resolution*

When the final disposition of a Request has been determined (e.g., APPROVED, DENIED, WITHDRAWN, etc.), the Authority Service responsible for the e-Tag will notify all parties electronically of the request's resolution. By doing so, all parties are advised that they should either implement or discard the request.

### 1.6.4.3 *Distribution of Potential TLR Profile Change*

~~Warning notifications of~~ The Reliability Authority Service may issue from time to time a warning notification called Potential TLR Profile Change. These warnings are distributed electronically to each Purchasing-Selling Entity listed on the e-Tag. These notices are preliminary, and may not reflect final curtailments.

~~Warnings of~~ Potential TLR Profile Change warnings are issued at the time a Reliability Coordinator requests a set of curtailments, but prior to the final confirmation and issuing of those curtailments by the RASRA Service. These warnings can be used by market participants to prepare for curtailments. The warnings may also be used by market participants to proactively modify their transactions in ways that address the reliability needs of the system without compromising the financial positions of the marketplace.

## 1.6.5 Query Functions

Queries may not be abused though excessive querying. General rules for this functionality are as follows:

- No service may query for the same data more than once (1) per minute
- Querying may NOT be considered a replacement for the requirement to have a dedicated listener for inbound information distributions. Services that observe behavior counter to these requirements may ignore such requests if the processing

of those requests represents a threat to the integrity of the system. Prior to ignoring the requests, contact must be made with the offending entity and resolution be attempted. If the attempts to resolve the issue fail, the recipient of the requests may block those requests, provided.

- The processing of those requests represents a real, *documentable* threat to the integrity of the system,
- The threat is fully documented (i.e., processor logs, customer complaints, etc...)
- That recipient has met the above minimum requirement, and
- The attempt to address the problem has been documented as well (i.e., E-Mails, Telephone recordings, etc...).

Some queries are processed through two-part messages, or asynchronous messages. In these types of messages, a query is made, and the recipient acknowledges receipt of the query, but does not respond immediately. The connection between the systems is broken, and the recipient processes the message. Upon completion of the processing, the recipient issues a callback message to the original query author and provides the results of the processing. In this manner, the recipient of the query may manage the processing of such queries more efficiently without threat to the integrity of the system (due to long complex queries that may take significant time and resources to process).

### 1.6.5.1 Querying for e-Tag Summaries

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query ~~e-Tag Authorities~~ Authority Services for a list of e-Tag ~~Summaries~~ summaries for a specified period of time for e-Tags in which they participate. Query parameters allow the ability to ~~Retrieve e-Tag Summaries~~ retrieve e-Tag summaries that:

- were created/last modified during a specified period of time, OR
- have a profile with the first start/last stop intersecting the specified period of time.

E-Tag data may be retrieved for past, current, or future time ranges. This method is intended to be used for emergency operational e-Tag recovery, and is not designed to be used for continuous real-time polling. The duration of the specified time period must not be greater than ~~24~~ 25 hours. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Querying for e-Tag ~~Summaries~~ summaries is an Asynchronous message.

### 1.6.5.2 Querying for an e-Tag

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query for the current data set that describes an e-Tag from the Authority Service. This includes all Request data associated with an e-Tag, including a ~~new tag request~~ New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ Security Keys.

### 1.6.5.3 Querying for e-Tags

Any registered entity (PSEs, BAs, ~~TSPs~~Transmission Service Providers, Reliability Coordinators, etc.) may query for a set of data that describes several e-Tags from the Authority Service. This includes all Request data associated with an e-Tag, including a ~~new tag request~~New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~Security Keys (or, for Asynchronous message, must have a listener registered for the entity they represent). Queries for multiple e-Tags are processed through Asynchronous messages.

### 1.6.5.4 Querying for an e-Tag's History

Any registered entity (PSEs, BAs, ~~TSPs~~Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a list of all of the methods that have been applied to a single e-Tag. This query allows a participant to re-construct the complete set of actions that were taken against an e-Tag. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Queries for multiple e-Tags are processed through Asynchronous messages.

### 1.6.5.5 Querying for Request IDs

Any registered entity (PSEs, BAs, ~~TSPs~~Transmission Service Providers, Reliability Coordinators, etc.) may query an Authority Service for a list of Request IDs, in order to verify synchronization with the ~~Authority's~~Authority Service's log of requests. Should an entity discover that they are not synchronized with the Authority Service then, this listing of Request IDs may be used to query an Authority Service node for the corresponding Request messages. The default behavior of the Authority Service node is to return all Requests grouped by Request State (e.g., PENDING, APPROVED, etc.) and ordered by original send time. An entity may ask that the listing be filtered based on one or more Request States. Once the Request ID listing has been retrieved, an entity may query the Authority Service node and retrieve sets of Request messages.

A Request ID listing may be used in two ways. The first is to notify an entity of requests they need to retrieve after communication failure. The second is for an entity to determine for itself which requests it needs after missing requests are detected. In either case, the Authority Service node may determine based on network traffic and the absence of messaging faults the number of Requests that may be retrieved at one time.

Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~Security Keys.

### 1.6.5.6 Querying for a Specific Request

Any registered entity (PSEs, BAs, ~~TSPs~~Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a copy of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~Security Keys.

### **1.6.5.7 Querying for a Specific Request's State**

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for the States of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ Security Keys.

### **1.6.5.8 Querying for Service Availability**

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may use the QueryAvailability message to query any e-Tagging service regarding its availability to process messages. For purposes of enforcing the restriction that "no service may query for the same data more than once (1) per minute", QueryAvailability messages sent to the same URL are considered to be querying for the same data, even if the ToEntity code is different in the messages.

## Section 2 - Tag Agent Service Functional Requirements

### 2.1 Introduction

All Purchasing-Selling Entities (PSEs) and any other parties responsible for submitting Arranged Interchange shall communicate the necessary information via the Agent. The Agent Service shall comply with all functional requirements set forth in this document. Users may elect to comply with these Agent Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Agent Service shall provide facilities to:

- Accept and validate input e-Tag data from the user.
- Generate all XML necessary to completely specify the transaction as defined in the e-Tag Data Model based on user input data.
- Assign and maintain the correspondence between each transaction's e-Tag ID and e-Tag Author's Security Key.
- Identify the Authority Service associated with the registered Sink Balancing Authority BA in the transaction and electronically communicate the e-Tag ID, Security Key, and associated e-Tag data to that Authority Service.
- Receive unsolicited information messages regarding e-Tags that they are a party to but for which they have no direct approval rights.
- Query Authorities Authority Services for the current State of each transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to correct any pending transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to withdraw any pending transaction or request submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to modify any existing transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Receive unsolicited information from the other e-Tag services regarding e-Tag updates, curtailment warnings, etc.

Information systems designed to provide more than one e-Tagging service (e.g., Agent and Authorities Authority Services) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

## 2.2 Registry Usage

The Agent Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ A listing of all such entities shall be maintained and available for downloading from the Electric Industry Registry web site. The Agent Service shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand as well as on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be in a format defined in a document posted on the ~~Electric Industry Registry vendor's~~ EIR's web site.

The Agent Service must support the receipt of unsolicited messages sent by ~~Authorities~~ Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ EIR and be capable of receiving e-Tag messages.

## 2.3 Tag Data Entry and Viewing

The Agent Service shall provide a mechanism for the user to input, edit, and view e-Tags, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document, with the exception that the user shall have the facilities to supply all transaction related information necessary to create complete, valid e-Tags, as well as the interfaces to view those e-Tags.

### 2.3.1 Tag ID Creation

Each e-Tag submitted for approval to any Authority Service by the Agent Service shall be identified by an e-Tag ID. This e-Tag ID must not be identical to any used previously to represent transactions with effective stop dates less than one year in the past. *See Section 1.4.2.1 "Tag IDs"*.

### 2.3.2 Security Key Creation

A unique Security Key shall be associated with the initial transmission of an e-Tag from the Agent Service to the appropriate Authority Service. The Agent Service shall be responsible for generating this Security Key consisting of a unique 12 character token. All subsequent messages exchanged between the Agent and Authority Services in regard to this e-Tag shall refer to both the e-Tag ID and Security Key assigned by the user's Agent Service. *See Section 1.4.2.2 "Security Keys"*.

## 2.4 Date and Time Handling

The Agent Service shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchange with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. ~~The Agent~~ The Agent Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Agent Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time. ~~E-Tag~~ All start and stop times in any e-Tag request must be on a minute boundary (i.e., whole minutes).

## 2.5 Data Validation

The Agent Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

## 2.6 Function Implementation

The Agent is responsible for being able to call the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributePotentialTLRProfileChange
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

### 2.6.1 Initiating a Request

The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry EIR) the Authority Service URL associated with the ~~load control area~~ Sink Balancing Authority on the e-Tag. Send

the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.

- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### 2.6.1.1 **Submitting a New e-Tag Request**

Write Request – The e-Tag Author must write a complete representation of the transaction ~~being e-Tagged~~, as defined in NERC/NAESB Standards and ~~the~~ supported in Section 6, Data Model Overview. The Author must also provide any additional parameters necessary to successfully call the RequestNewTag method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). A ~~new~~ New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1. Specifically, Agents Agent Services must submit all appropriate profiles, but are not allowed to submit Current Level profiles. All Correction IDs must be set to zero in the ~~new~~ New e-Tag Request.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag being sent must not contain a Profile representing a transaction starting more than 168 hours in the past.
- ATF e-Tags must be no longer than one hour in duration.
- ~~Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.~~
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the Scheduling Entity field is left blank, the Agent Service must ensure that a BA ~~tag~~-code that is identical to the ~~TSP-tag~~ Transmission Service Provider code exists prior to submission to the Authority Service. If no BA ~~tag~~-code identical to the ~~TSP-tag~~ Transmission Service Provider code is found, the Request is invalid.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the new e-Tag a reference number, through which the e-Tag Author may query ~~for State~~. All ~~new~~ New e-Tag ~~requests~~ Requests will receive a request ID of zero (0).

### 2.6.1.2 **Submitting a Correction Request**

Write Request – The e-Tag Author is responsible for creating the e-Tag correction(s) if needed. The e-Tag Author must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to ~~an OASIS contract reference~~ number (OASIS assignment reference number) must not only contain the OASIS reference number, but also the Transmission Allocation ID, a reference to the Parent Segment, the Product, and the associated ~~Transmission Customer~~ transmission customer or TPSE.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached a final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Agent Service must record these numbers for later reference and integrity verification.

### 2.6.1.3 **Submitting a Profile Change Request**

Write Request – The e-Tag Author must write a complete representation of the Profile Change to the e-Tag. The Author must also provide any additional parameters necessary to successfully call the RequestProfileChange method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). e-Tag Authors are required to submit all necessary profiles to support the desired change(s); ~~Authorities~~ Authority Services will not auto-generate upstream/downstream values as done during reliability limit setting. ~~Agents~~ Agent Services are not allowed to make changes to the Reliability limits except in the case of DYNAMIC type e-Tags where changes made by the Agent Service to the market level profile after the fact (to reflect actual metered values) will clear any previously existing reliability limits. Agent Services are not allowed to make changes to the Transmission Allocation profile when submitting any ATF adjustment (including DYNAMIC type e-Tags ATF adjustments). Furthermore, ~~Agents~~ Agent Services are not allowed to submit Current Level profiles, because these profiles are calculated.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes can only occur once an e-Tag has transitioned to the Composite State of CONFIRMED OR IMPLEMENTED.
- Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Extensions must be received NO LATER than the last time specified in any profile in the e-Tag. ~~E~~e-Tags may NOT be extended once the e-Tag's profile (including any previous extensions) has been completed. ATF e-Tags may not be extended.
- Profile change requests may not add or remove any entity.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the Profile Change a request number through which the e-Tag Author may query for Request State. That number will always be greater than zero (0).

#### **Additional Function Implementation Details**

It is possible for an e-Tag Author to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should an e-Tag Author need to modify a transmission allocation then the e-Tag Author must specify the change in the same manner in which profile change or extension would be performed. For example, if a request was made to extend an e-Tag for an additional hour (while intending to utilize the same transmission reservation as used in the previous hour), then an allocation exception would be inserted that specified the additional hour.

Modifications to DYNAMIC type e-Tags more than one hour in the past are used to set the actual interchange quantity. The current level needs to be set to this actual interchange quantity regardless of any other profile values. This is achieved by clearing any existing reliability limit and setting the Market Level profile.

## 2.6.2 Request Distribution

The Agent Service only receives three types of Request Distribution – New e-Tag Request Distributions, Correction Request Distributions, and Profile Change Request Distributions.

Upon receiving a distribution message, the agent software should decode, parse, and validate the XML message. If the message doesn't pass syntactic and semantic validation, then the ~~agent~~ Agent Service must return a fault or error response to the sender. If the message does pass validation, then the agent must return a success response to the sender. Either way, the Agent Service software is required to provide a valid XML response (success or failure) to the sender of any distribution message.

### 2.6.2.1 *Processing a New e-Tag Request Distribution*

New e-Tag Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method sections must not be violated
- An e-Tag with the ID presented must not already exist on the Agent Service

### 2.6.2.2 *Processing a Correction Request Distribution*

Correction Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached their final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Agent Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the Agent Service Operator that the correction has occurred, highlighting the correction for their inspection
- Immediately consider re-setting any previous e-Tag assessment action (APPROVED, DENIED, STUDY, etc.) of an approval entity that is impacted by the correction

### 2.6.2.3 *Processing a Profile Change Request Distribution*

New Profile Change Request Distribution messages must pass the following rules in order to be considered valid:

- The e-Tag ID Referenced in the message must be one held by the Agent Service

- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.6.3 Request Actions

### 2.6.3.1 Approving and Denying Requests

The Agent [Service](#) has no requirements with regard to Request Approval and Denial.

### 2.6.3.2 Withdrawing a Request

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority [Service](#) at the time the request was made.
  - –The original Security Key for the transaction that was used in the e-Tag Creation message.
  - ~~A reason that explains why the Withdrawal was made.~~
- Withdraw messages must not be sent for requests that have already reached a final state (IMPLEMENTED, DEAD, etc.).
- Withdraw messages may be sent for ATF Requests that have a Request State of PENDING.
- Look up (in the Electric Industry Registry) the Authority [Service](#) URL associated with the ~~load control area~~[Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).
- The Request State is set to WITHDRAWN.
- WITHDRAWN is a final ~~state~~[Composite State](#).

### 2.6.3.3 Cancelling an e-Tag

The following procedure should be used to cancel an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The message must include the original Security Key for the transaction that was used in the e-Tag Creation message. Specify the termination time as the ~~block start time~~[Tag Start Time](#) of the e-Tag.
- RequestTerminateTag messages must only be sent for e-Tags with a Composite State of CONFIRMED, IMPLEMENTED, or TERMINATED.

- The RequestTerminateTag message must contain a termination start time that is equal to the ~~block-start-time~~ Tag Start Time (if it is later it could only transition to TERMINATED).
- Only CONFIRMED e-Tags may transition to CANCELLED e-Tags.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load-control-area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Upon cancellation, all pending requests for the cancelled e-Tag are set to a Request State of DENIED.
- CANCELLED is a final Composite State.

#### **2.6.3.4 Terminating an e-Tag**

The following procedure should be used to cancel or terminate an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the Request ID provide by the Authority Service at the time the request was made and the desired termination time. The termination message must also include the original Security Key for the transaction that was used in the e-Tag Creation message.
- RequestTerminateTag messages are only valid for requests that have reached the state of CONFIRMED, IMPLEMENTED, or TERMINATED.
- RequestTerminateTag messages may be used for IMPLEMENTED ATF e-Tags.
- Termination of a TERMINATED e-Tag may only change the termination time to an earlier time than the last approved RequestTerminateTag Request.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load-control-area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Once approved, the Composite State of the e-Tag becomes CANCELLED or TERMINATED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.
- Both CANCELLED and TERMINATED are final ~~states~~ Composite States.

- It is acceptable to terminate an e-Tag multiple times, assuming that the termination time of each termination message is earlier than the termination time of the prior termination messages.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with block end time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, are set to a Request State of DENIED.

## 2.6.4 Information Distribution

### 2.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Approval State Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 2.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Resolution Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

When a Request is resolved to a state of APPROVED, then it should be considered complete and the Request data should be applied to the e-Tag. When a Request is resolved to WITHDRAWN, DENIED, or EXPIRED the data in the Request should be disregarded.

### 2.6.4.3 *Processing a Potential TLR Profile Change Distribution*

The following validation criteria must be checked when an Agent Service receives a Potential TLR Profile Change Distribution message:

- The e-Tag IDs Referenced in the message must be held by the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

Agents may elect to verify the validity of the Potential TLR Profile Change Distribution. To do this, the Agent Service must send a Callback message to the RASRA Service that issued the Potential TLR Profile Change Distribution. The Callback must contain the same ~~security key~~ Security Key presented to the Agent Service as part of the original TLR Profile Change Distribution message. If the Agent Service is unable to connect to the RASRA Service or if the RASRA Service replies with a Fault, the Agent Service should attempt to retry the message, as described in section 7.1.1.1.

## 2.6.5 Query Functions

### 2.6.5.1 Synchronous Queries

Synchronous Queries include the following:

- Query e-Tag
- Query RequestIDs
- Query Request
- Query State
- Query Availability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 2.6.5.1.1 Query for an e-Tag

Agent Service must specify a valid e-Tag ID and the associated Security Key they used to submit the original New e-Tag Request.

#### 2.6.5.1.2 Query for Request IDs

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request. Optionally, the user may elect to filter Request ID's based on the resolution of the requests associated with the e-Tag (i.e., show only IMPLEMENTED Requests).

#### 2.6.5.1.3 Query for a Request

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID they wish to retrieve.

#### 2.6.5.1.4 Query for a Request's State

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID for the desired State information.

#### 2.6.5.1.5 Querying for System Availability

Agent Service must specify a particular system for which to query availability - by both entity desk and ~~e-Tag~~-service (Agent, Approval, Authority, or RASRA Service).

Agents should respond back to ~~Queries~~queries for ~~System Availability~~system availability as follows:

- If the Agent Service is operating correctly, the Return Value should be SUCCESS.
- If the Agent Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Agent Service should indicate that error.

#### 2.6.5.2 Asynchronous Queries

Asynchronous ~~Queries~~queries include the following:

- Query Summaries
- Query e-Tags
- Query History

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load control area~~Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message from the Authority Service. The response message will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the ~~Agent's~~Agent Service's registered ~~service~~-URL, and will include the same ~~security key~~Security Key used by the Agent Service to submit the query. The Agent Service should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 2.6.5.2.1 Query Summaries

Agent Service must specify either an Active Range or a Last Modified Range for which the e-Tag summaries should be returned. The Active Range is used to specify a range of time during which an e-Tag must have been "active" (i.e., start or end date/time of the e-

Tag falls within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a Request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When an ~~approval~~ Approval or ~~agent-service~~ Agent Service requests recovery over an outage range, the service must create a list of unique ~~URL's~~ URLs for Authority ~~services~~ Services and send the Query Summary messages to each ~~authority service~~ Authority Service in order to retrieve all e-Tags for which that e-Tag ~~approval~~ Approval or ~~agent-service~~ Agent Service is a party. For ~~Authorities~~ Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The ~~Tag~~ Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the ~~Authority's~~ Authority Service's companies is listed as the intended message recipient.

Agent Service must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Agent Service creates a Query Summaries message:

- The rules described in the Data Model and Method Descriptions section must not be violated
- The Range specified must not exceed twenty-~~four~~ five (25) hours. ~~Authorities~~ Authority Services are only required to provide ~~24~~ 25-hours of information in response to any single query.

The following validation criteria must be checked when an Agent Service receives a Query Summaries Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the Summaries Query to the Authority Service

#### 2.6.5.2.2 Query e-Tags

The Agent ~~service~~ Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. The Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing ~~security-keys~~ Security Keys can be recovered using the Query Summaries message. The ~~User~~ user must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### 2.6.5.2.3 Query History

Agent Service must specify a valid e-Tag ID and Security Key. The ~~security key~~Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the ~~security key~~Security Key provided by the Authority Service through a Distribute message. Missing ~~security keys~~Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Agent Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.7 Availability and Performance

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## Section 3 - e-Tag Authority Service Functional Requirements

### 3.1 Introduction

All entities responsible for performing the Balancing Authority (BA) function shall provide the necessary hardware, software, and/or services to implement the Authority Service. The Authority Service shall comply with all functional requirements set forth in this section. BAs may elect to comply with these Authority Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Authority Service shall provide facilities to:

- Accept as input e-Tag data transferred in compliance with this document from any Agent Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly.
- Identify all entities having approval rights over the transaction request, and transfer the request to the associated ~~Approvals~~ Approval Services for evaluation
- Identify all entities entitled to an informational copy of the transaction request, and transfer the request to the associated Agents and ~~Approvals~~ Approval Services.
- Manage each request's approver's Approval States and overall Request State based on communication with the Agent and ~~Approvals~~ Approval Services.
- Verify the identity of each approval entity attempting to approve or deny a Request based on the presented e-Tag ID and Security Key, and update the entity's Approval State and the Request State, as appropriate.
- Provide facilities for overriding Approval States on the behalf of an Approving entity.
- Verify the identity of each requesting entity attempting to make a request based on the presented e-Tag ID and Security Key, and create the Request as appropriate.
- Generate notification messages to ~~Approvals~~ and ~~Agents~~ Agent Services as appropriate.
- Respond to inquiries for transaction information made by Agents or ~~Approvals~~ Approval Services.
- Store all e-Tags, to be available for on-line querying and access, for at least ninety (90) days after the stop date/time in the e-Tag.

Information systems designed to provide more than one e-Tagging service (e.g., Authority and ~~Approvals~~ Approval Service) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

### 3.2 Registry Usage

The Authority Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. The ~~Electric Industry Registry~~ list of all such

entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. The Authority Service shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be in a format defined in a document posted on the ~~Electric Industry Registry~~ EIR vendor's web site.

Each BA shall provide the necessary information to identify in the ~~Electric Industry Registry~~ EIR who serves as their Authority Service when that particular BA is referenced as the Sink BA in an e-Tag.

### 3.3 Tag Data Entry and Viewing

The Authority Service is primarily an automated manager of data that should require little manual intervention. However, certain events may require user interaction. To this end, ~~The~~ the Authority Service shall provide a mechanism for a user to view e-Tag requests and **directly modify/override entity Approval States**, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all information (as described in this document) contained in a valid e-Tag.

#### 3.3.1 Approval State Override

As required above, Approval States may be overridden by the Authority ~~operator~~ Service Operator. Such overrides must occur within the normal bounds of the state management logic:

- Approval States cannot be overridden for requests that have already reached a final state (i.e., IMPLEMENT, CANCELLED, etc.)
- Overrides must be treated exactly the same as if the approver had set the Approval State (i.e., if a state setting would normally move the Request to a state of IMPLEMENT, then an override to the same state must have the same result).

The ability to override Approval States must only be utilized in the event that the entity whose state is being overridden has requested the Authority ~~operator~~ Service Operator to do so due to communication or system failure.

#### 3.3.2 Security Keys

The Authority Service shall be responsible for managing Security Keys associated with e-Tag requests. Security Keys for ~~Agents~~ Agent Services are chosen by the Agent Service itself; all other Security Keys (with the exception of the IDC Security Key described below) are assigned and managed by the Authority Service.

Each Authority Service shall be assigned a unique IDC Security Key to be used when communicating with the IDC. All communications with the IDC must use this IDC Security Key in order to be considered valid. The IDC will reject any messages without a valid IDC Security Key. The IDC e-Tag Key must be considered confidential.

### 3.4 Date and Time Handling

The Authority Service shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. E-Tag start and stop times must be on a minute boundary. The Authority Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Authority Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

The Authority Service must calculate the latest approval time in order to determine when to end the approval period and set the final Request State of an e-Tag. The absolute date/time by which an e-Tag may be approved is calculated based on a combination of the NERC/NAESB timing guidelinestables and the application of the start ramp duration defined in the first profile block in the e-Tag and e-Tag ~~start time~~Start Time. If the first energy profile block in the e-Tag does not contain a ramp duration or if the first energy profile block does not start at the e-Tag ~~start time~~Start Time, then default ramp durations should be used. Default ramp durations are defined in NAESB ~~Standard R05001~~WEQ-004-17. The default ramp durations must be used in conjunction with the NERC/NAESB timing guidelines to determine the absolute time limit for approval in the absence of a ramp duration supplied by the e-Tag Author.

The ramp type for all interchanges between balancing authorities is a straddle ramp. Straddle ramps divide the start ramp duration equally across the profile ~~block start time~~Block Start Time and divide the end ramp duration equally across the profile block end time. When the e-Tag contains multiple profile blocks, the ramp duration in the profile block's ramp start duration is used to calculate ramp start time and instantaneous MW levels. The ramp end duration is ignored in all profile blocks except for the last profile block where it is used to calculate the ramp end time and instantaneous MW levels. The ramp start time can be determined by dividing the ramp duration by two and subtracting it from the profile ~~block start time~~Block Start Time. The start time derived from the first profile block is used to determine the point at which the e-Tag transitions from CONFIRMED to IMPLEMENTED. The ramp continues from the ramp start time across the profile ~~block start time~~Block Start Time to the ramp duration minutes divided by 2 after the profile ~~block start time~~Block Start Time.

The default ramp duration for reliability adjustments is ten minutes ~~(for all interconnections)~~. Ramp rates may be optionally supplied by the entity requesting the profile change. When a reliability adjustment is made, it may result in the creation of additional profile blocks. The ramp durations of the profile blocks will need to be adjusted in this case with the ramp start duration of the adjusted block being set to ten minutes or the supplied start ramp duration and the rest of the ramp start durations (and end duration in the final block if applicable) remaining with their associated profile blocks.

### 3.5 Data Validation

The Authority [Service](#) shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### 3.6 Function Implementation

The Authority [Service](#) is responsible for being able to call the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributeTerminateTag
- CallbackSummaries
- CallbackTags
- CallbackHistory

And process the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- Query Availability

Semantics, including calling and processing rules are described in detail in the following sections.

The Authority [Service](#) is also responsible for Request State Management, as described in section 1.3.4.2 and 1.3.4.3. Passive State settings due to time elapse are also the responsibility of the Authority [Service](#).

#### 3.6.1 Initiating a Request

##### 3.6.1.1 Processing a New e-Tag Request Submission

The ~~security key~~ [Security Key](#) presented with the Request e-Tag message will be used by the Authority [Service](#) for all future messages from/to the e-Tag author for this e-Tag.

Authority Service must compare the e-Tag's start time or calculated ramp start time to the timing tables in the NERC/NAESB Standards-timing guidelines. The e-Tag is ~~considered to be assigned a Time Classification of~~ LATE, ATF, or ~~on~~ On-time as per those ~~guidelines. E-Tag tables. All request~~ start and stop times must be on a minute boundary. E-Tags submitted after the ~~e-Tag stop time~~ Tag Stop Time (as determined by the time of receipt at the Authority Service) must be considered to be ATF and designated as such. The corresponding enumeration must be set by the Authority Service and must be persistent, reset only if e-Tag Author makes a correction.

The following validation criteria must be checked when an Authority Service receives a Request e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the Authority Service
- If a Transmission Segment's POR or POD is listed as a DC Tie facility, then the associated ~~Balancing Authority~~ BA for that DC Tie must be listed as a ~~Scheduling Entity~~ SE for that Transmission Service Provider.
- A New e-Tag Request may not create an e-Tag that starts more than 168 hours in the past.
- An ATF e-Tag must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the ~~Scheduling Entity~~ SE field is missing, the Authority Service must ensure that a BA ~~tag~~ code that is identical to the ~~TSP tag~~ Transmission Service Provider code exists. If no BA ~~tag~~ code identical to the ~~TSP tag~~ Transmission Service Provider code is found, the ~~Request~~ Request's delivery state is ~~invalid~~ set to Invalid.

Once an e-Tag Creation request passes validation, the Authority Service must store the e-Tag in its local data store and identify it as a Pending Request. In so doing, it must generate the appropriate "Current Level" profile. The initial Current Level profile must be stored by the Authority ~~service~~ Service if "In-Kind" losses are specified so it may later be used for loss accounting, replaced only when ~~market level~~ Market Level profile change requests are approved. For each supplied base profile, the *Current* base profiles will be generated. For all transactions and all profiles, the Current Level is equal to the specified Market Level.

The Current Level profile should not be distributed, but rather derived based on all approved Requests associated with a particular e-Tag, processed in order of receipt by the Authority Service.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

The Authority Service must then build the distribution table for the e-Tag. Details follow in the section below. Once the distribution list has been determined, the Authority Service must distribute the e-Tag to the appropriate parties.

### 3.6.1.1.1 Identifying the Distribution List

~~Tag Authorities~~ The Authority Service must determine the distribution list for an e-Tag. The distribution list is comprised of the following entities as listed on the e-Tag:

- The e-Tag Author
- The Generation Providing Entity (Merchant)
- The Load Serving Entity
- All ~~Intermediate~~ Purchasing Selling Entities (Title Holders) in the Financial Path
- All Transmission Customers
- The Balancing Authority in which the generation is located (Source BA)
- The Balancing Authority in which the load is located (Sink BA)
- All Transmission Service Providers
- All Scheduling Entities for those Transmission Service Providers
- All Reliability Coordinators listed in the Electric Industry Registry as being associated with the Source BA, Sink BA, and intermediate BAs.
- All entities contained in the CC list.

In order to determine a Service URL for the above entities, the following rules must be used:

- For GPEs, LSEs, and Transmission Customers, there will be potentially two entries. The first Service URL will be the entity's registered URL for their Agent ~~service~~ Service. The second Service URL will be the entity's registered URL for their Approval ~~service~~ Service.
- For intermediate PSEs, the Service URL will be the entity's registered URL for their Agent ~~service~~ Service.
- For all other entities, the Service URL will be the entity's registered URL for their Approval Service.
- For the GPE, LSE, and Transmission Customer, approval rights may be held, delegated, or waived. When holding rights, the Service URL is based on the registered approval URL for that entity. When delegating rights, the Service URL is based on the approval URL of the alternate entity specified for the specific source/sink in the e-Tag; this delegation always supersedes that specified as the registered approval URL for the GPE/LSE/TC. If the delegated entity is not already in the distribution list, the entity must be added. When waiving rights, the entity will have explicitly not listed an approval service in their registration or that of the source/sink.
- Entities identified in the CC list must not be given approval rights though the e-Tag may be distributed to the entities registered URL for their Approval Service as described in section one of this document.

In addition, the messages, including callbacks, must be sent to the Secondary Service URL registered to any PSE, BA, or Transmission Service Provider in the distribution list. This does not apply to any URL that matches a Service URL. These forwarded messages shall not impact the Delivery State of the associated entity.

No duplicate entities may be in the distribution list. A duplicate is defined as entities sharing both the same entity type (BA, TSP, PSE, RC), NERC Acronym Tagging Entity ID, Service Type (i.e., Agent, Approval, or Authority), and Service URL. Any entity that does not have a registered Service URL shall be removed from the distribution list, and any approval rights waived. Each entity will have a record in the list, identifying their Delivery Service URL for the transaction. A record in the list should have the following general format:

TAG ID	REQUEST ID	TAGGING ENTITY CODE ID	SERVICE TYPE	SERVICE URL
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### 3.6.1.2 Processing a Correction Request Submission

The following validation criteria must be checked when an Authority Service receives a Request Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security key presented must be identical to the key presented to the Authority Service at the time the e-Tag was originally submitted by the Agent Service.
- Only the e-Tag Author or TSP Transmission Service Provider may issue a correction
- Corrections are only allowed for e-Tags that are in a PENDING state.
- Only certain items may be corrected on an e-Tag. Specifically, the following are NOT allowed:
  - Addition or removal of any entity from the transaction path (both financial and physical)
  - Changes to the Energyenergy profile (changes to the transmission allocations are acceptable)
  - Reassignment of a Transmission Allocation to a new Parentphysical segment
  - Addition or Removal of any Scheduling Entity
- TSP Transmission Service Provider authored corrections may only change the TransProductRef and transmission allocation on a physical segment where they are the associated TSP Transmission Service Provider. The total transmission allocation MWlevel may not be changed (increased or decreased) for any period. Extensions are prohibited.

Once a Correction Request passes validation, the Authority Service must recompute ActOnByTime and TimeClassification using the correction's submission time in place of the e-Tag submission time and following the rules from the NERC/NAESB Standards timing guidelines tables. For TSP Transmission Service Provider authored Correction Requests, since no approval process is required, the Authority Service must assign the same values active for the e-Tag for the ActOnByTime and TimeClassification. The

Authority Service must then assign an incremental unique number to the correction, and each item being corrected must be updated to reflect this number. The first correction must be considered correction ID one (1). The response must contain references to the versions of the corrected segments.

The Authority Service must REPLACE the data in its current store with the new correction data. Any entity impacted by the correction (as defined in Section 1.6.2) must have their Approval State reset to PENDING and be informed of the change through Correction Request Distribution.

### **3.6.1.3 Processing a Profile Change Request Submission**

The following validation criteria must be checked when an Authority Service receives a Request Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- Profile Change Requests are only allowed for e-Tags that have been CONFIRMED or IMPLEMENTED
- Profile Change Requests may only change hours that are at the EARLIEST one (1) hour in the past. Dynamic tags are an exception to this rule (they may be changed up to 168 hours in the past).
- Profile change requests may not be made to extend an e-Tag once the e-Tag's profile has been completed (i.e., current time is equal to or later than the last date/time specified in the e-Tag).
- Reliability Limits may be set and cleared for any duration.
- Only certain entities may change certain profile values.
- Reliability Limits may specify the applicable BaseProfileID. The default location of the limit is at the Source BA (formerly referred to as GCA) (BaseProfileID 1).
- Profile change requests, including DYNAMIC type e-Tag ATF adjustments, made by the e-Tag author will use the source profile for loss calculations and will replace the profile stored on the Authority Service for use in loss calculations once the Request has reached a CONFIRMED or IMPLEMENTED state.
- Reliability Limits and Transmission Allocation may not be changed for DYNAMIC e-Tags more than one hour in the past (but may be cleared).
- All applicable validations required in NERC INT-007-1 must be performed.
- TSP Transmission Service Provider Market Profile changes may only impact the TransProductRef and transmission allocation on a physical segment where they are the associated TSP Transmission Service Provider.

- ~~TSP~~ Transmission Service Provider Market Profile changes may not reduce or increase the total transmission allocation MWlevel for any period. Extension is prohibited.
- ~~TSP~~ Transmission Service Provider Market Profile changes cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.
- Profile change requests may not add or remove any entity.

Upon receipt, the Authority sets the ActOnByTime and TimeClassification based on the time of receipt and the timing table in the NERC/NAESB Interchange Standard timing tables. ~~TSP~~ Standards. Transmission Service Provider Market Profile changes to the Product Code or Transmission Allocation requires no approval process therefore ActOnByTime should be set to the time of receipt and TimeClassification should be set to “On-Time”-time.

If the Request changes the reliability limit, then the Authority Service must calculate the correct MW values to use for all profiles except for the source profile (which is included in the Profile Change message). The source profile will be associated with a physical location (BaseProfileID). If no physical location is included in the Profile Change message then the Authority Service will default the location to the Source BA (formerly referred to as GCA). The value of each profile calculated below must use the location information to calculate the correct profile values for both upstream and downstream profiles. The value of the profile at the physical segment specified in the Profile Change message will be the same as the source profile. The process for calculating upstream and downstream profiles is done in three steps:

~~Loss Percentage, Carry Forward, and the New Limit calculation.~~ Step

The first step is to calculate the Loss percentage supplied by the creator of the original e-Tag based on the current ~~MARKET LEVEL~~ Market Level. This is done by applying the specified formula, for the day the curtailment is effective.

$$LossPercentage = \frac{TotalDailyMWhPOR - TotalDailyMWhPOD}{TotalDailyMWhPOR}$$

#### Carry Forward Step

To minimize overpayments or underpayments when calculating the POD Megawatt profile under a curtailment a CarryForward concept is used to ensure that the delivering party is not over-charged with losses for the transaction. The starting value of CarryForward will always be zero. Afterwards, the CarryForward value must be re-calculated each hour or part of an hour for which a new curtailment has been applied to the profile.

$$CarryForward_N = 0$$

#### New Limit Step

$$NewLimit_N = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage)$$

After the first calculation of the NewLimit, a CarryForward will exist and should be calculated as:

$$CarryForward_{N+1} = RoundUP(SpecifiedLimit * LossPercentage) - (SpecifiedLimit * LossPercentage)$$

Afterwards, curtailment should use the CarryForward value to calculate the new limit as:

$$NewLimit_{N+1} = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage - CarryForward_{N+1})$$

Example:

Daily MWh POR = 100 MW

Daily MWh POD = 97 MW

SpecifiedLimit (Curtailed to) = 50 MW

$$LossPercentage = \left( \frac{100 - 97}{100} \right) = 0.03$$

$$CarryForward_{N_0} = 0$$

$$NewLimit_{N_0} = 50 - RoundUp(50 * 0.03) = 50 - 2 = 48$$

$$CarryForward_{N+1} = RoundUp(50 * 0.03) - (50 * 0.03) = 2 - 1.5 = 0.5$$

Second Curtailment occurs to 40 MW

$NewLimit_{N+1} = 40 - RoundUp(40 * 0.03 - 0.5) = 40 - RoundUp(.7) = 39$  If a Reliability Limit ~~Clearing-clearing~~ is applied, then reliability limits for all periods following the start of the ~~Clearing-clearing~~ through the end of the clearing are set to null and the limits erased.

Once the downstream reliability profiles have been created, the Authority Service must generate the appropriate "Current Level" exception profiles. The exception profiles must only reflect the hours changed, NOT the entire transaction. The current *exception* profile will always be generated based on the following rules:

#### **For PSE-Originating Market Changes:**

*For each supplied Exception Profile*

- The Exception Current Level is set to the lesser of the effective Reliability Limit for the profile and the Exception Market Level. Effective Reliability Limit is defined as the current Exception

Reliability Limit if one exists; if none exists, then the Reliability Limit is assumed to be infinite.

**For Source BA/~~TSP~~Transmission Service Provider/Sink BA-Originating Reliability Changes:**

*For Generation Profiles:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the specified Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level.

*For each POR, POD, and Load Profile:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the previously calculated Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level Exception

For any Exception Profile where the Current Level is equal to the Base Current Level, the Exception Profile must be eliminated. This is intended to reduce redundant data exchange.

**Additional Implementation Details**

It is possible for an e-Tag Author or ~~TSP~~Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules must be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. In so doing, a new reservation allocation and new Base Profile will be added. The reservation allocation will NOT be added as an exception allocation, as no previous base exits to be modified.
- Should an e-Tag Author need to modify an allocation, the changes must be specified in the same manner in which profile change or extension would be processed. For example, if a request was made to have a transaction for an additional hour, and the requestor desired to use the same reservation that was used for the previous hour, an allocation exception would be inserted that specified the additional hour.
- ~~TSPs~~Transmission Service Providers may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.

- **TSP** Transmission Service Provider transmission allocation adjustments cannot impact any MW level or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

Following this modification of the allocation the ChangeRequest is distributed to all appropriate parties.

### 3.6.2 Request Distribution

The following procedure should be used when sending Request Distribution messages:

- Encode the new Request in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the intended recipient of the distribution message
- If the submission fails or the response contains fault messages, attempt to resend the message using the process described in section 7.1.1.1.
- Set the delivery status to an appropriate value indicating whether or not the message was successfully delivered to the intended recipient. Appropriate values are DELIVERED (no errors), COMMFAIL (couldn't contact the message recipient) and INVALID (an error was returned by the message recipient)

#### Identifying the Entities with Approval Rights

Some of the entities in the Distribution List will have Approval Rights over the various requests, while others will have only viewing rights. The rules for determining who has Approval Rights to each Request are defined in Section 1.6.2.1 of this document.

The Authority Service will need to maintain a RequestApprovalRights list for each e-Tag. This list will be used in generating the appropriately formatted distribution messages for delivery to the various distribution entities. The list will also be used to store local State information about each entity. Each entity will have a record in the list, defining their Delivery State, Approval State, and State Type. Initial delivery state (before delivery has been attempted) should be set to PENDING. A record in the list should have the following general format:

TAG ID	REQUEST ID	ENTITY CODE	DELIVERY URL	DELIVERY STATE	APPROVAL STATE	STATE TYPE
--------	------------	-------------	--------------	----------------	----------------	------------

Each Request requiring Approvals (New e-Tag Request, Profile Change Request) must have a data set of this type associated with it. Entities with Approval rights will have their Delivery State set to QUEUED, their Approval State set to PENDING, and their State Type set to NA.

Entities without Approval Rights will have their Delivery State set to QUEUED, their Approval State set to NA, and their State Type set to NA.

An entity authoring a Request will be assumed to have implicitly approved that Request and as such, will have their Delivery State set to QUEUED, their Approval State set to APPROVED, and their State Type set to ACTIVE. The entity will, however, retain rights to set their Approval Status (i.e., if they wish to deny their own Request, they may do so).

Entities with Approval Rights on a Request are specifically instructed to take action on the e-Tag through the use of the ApprovalRights flag.

### **3.6.2.1            *Distributing a New e-Tag Request***

Distribution of a New e-Tag Request is handled as described in Section 3.6.2.

### **3.6.2.2            *Distributing a Correction Request***

Distribution of a Correction Request is handled as described in Section 3.6.2.

For entities impacted by the Request, the Authority [Service](#) must set the IMPACT flag to TRUE. For entities not impacted by the correction, the IMPACT flag must be set to FALSE.

~~In certain situations, it is possible for a Transmission Customer or Scheduling Entity to be added or removed. Should such a case occur, the following process must take place:~~

- ~~1. Any Entities being removed must be sent the correction with the impact flag set to TRUE~~
- ~~2. Any Entities being removed must have their entries removed from the Distribution list~~
- ~~3. Any Entities being removed must have their entries removed from the RequestApprovalRights list~~
- ~~4. Any New Entities must have their entries added to the Distribution list~~
- ~~5. Any new customers must have their entries added to the RequestApprovalRights list.~~

~~Following the completion of these steps, the Correction must be distributed normally.~~

### **3.6.2.3            *Distributing a Profile Change Request***

All distributions must include the market levels or reliability limit profiles for that period.

Distribution of a Profile Change Request is handled as described in Section 3.6.2. If a Reliability Limit [Clearing-clearing](#) is being requested, then that limit clearing must be distributed to all entities.

### 3.6.3 Request Actions

#### 3.6.3.1 Processing Request Approvals and Denials

The following validation criteria must be checked when an Authority [Service](#) receives a Request Approval or Denial message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag Id presented must represent an e-Tag currently held by the Authority [Service](#)
- The Request ID presented must represent a Request currently held by the Authority [Service](#)
- The Security Key presented must be identical to the key assigned by the Authority [Service](#) at the time the new e-Tag was originally transferred to the Approval [Service](#).
- The entity attempting to set State must be one of the entities having approval rights over the Request.
- An Author of the State Setting must be specified
- State Settings are only allowed for Requests that are not in a final state.
- State Settings of DENIED or STUDY must be accompanied by reasons that explain why the specific state was chosen
- ~~The entity attempting to set State must have the most recent correction of the data within its scope~~

Once a Request Approval message passes validation, the Authority [Service](#) must store the State in its local data store and use it to identify when the Request's Approval State should be updated. The State Type must be marked as "ACTIVE." If a denial or study, the State information must be distributed to all parties.

In certain cases, the Authority [Service](#) Operator may be obligated to override a State request on the behalf of another entity. Should this situation occur, the new State must be recorded and the State Type set to "OVERRIDE."

#### 3.6.3.2 Processing a Withdraw Request

The following validation criteria must be checked when an Authority [Service](#) receives a Withdraw Request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority [Service](#)
- The Request ID presented must represent a Request currently held by the Authority [Service](#)
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key

presented to the Authority Service at the time the e-Tag was originally transferred by the Agent. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.

- The entity attempting to Withdraw must be the Author of the Request.
- A Withdrawal is only allowed for a Request that is PENDING
- ~~A Withdrawal must be accompanied by a reason that explains why the Withdrawal was made.~~
- Withdraw Requests may be submitted for ATF Requests that have a Request State of PENDING

If the Request State of the Request is PENDING, then the Authority Service must set the Request State of the Request to WITHDRAWN and distribute a DistributeStatus message as required in section 3.6.4.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

WITHDRAWN is a final state.

### 3.6.3.3 Processing a Terminate Request

The following validation criteria must be checked when an Authority Service receives a RequestTerminateTag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- RequestTerminateTag requests are only allowed for e-Tags that are CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag request must contain a termination time that is between the e-Tag ~~block start time~~ Start Time and e-Tag ~~block end time~~ Stop Time, and later than the time of receipt.
- A RequestTerminateTag request is invalid if it requests a start time that is later than or equal to an existing RequestTerminateTag Request for the same e-Tag; however, a request for an earlier termination time is allowable.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with ~~block end time~~ Block Stop Time after the

termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, must be set to a Request State of DENIED.

The Authority Service must distribute a DistributeTerminate message as defined in 3.6.1.1.1. The Request is subject to the same approvals as a new adjustment request. The Authority Service sets the ActOnByTime based on the receipt time of the message and the NERC/NAESB Interchange Standard timing tables. This will also include calculation of ramp start time. The Authority Service also sets the TimeClassification based on the NERC/NAESB Interchange Standard timing tables and the termination time. If the Request State becomes APPROVED, the ~~Authority's~~ Authority Service's action depends on the termination time.

- If the termination time is equal to the ~~block start time of the e-Tag~~ Start Time of the e-Tag, then the Authority Service must distribute a DistributeResolution message that sets the Composite State of the e-Tag to CANCELLED.
- If the termination time is after the ~~block start time of Tag~~ Start Time of the e-Tag, then the Authority Service must set the market level profiles and transmission allocation profiles of the e-Tag to zero starting at the termination time, and distribute a DistributeResolution message that includes the time at which the Authority, Approval, and Agent Services will set the e-Tag's Composite Status to TERMINATED. This is called the TerminationTime.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

CANCELLED and TERMINATED are final states.

### 3.6.4 Information Distribution

Whenever a significant status event occurs as defined below, or a Request Resolution occurs, the Authority Service must notify all parties on the distribution list of the e-Tag regarding the change. This notification aids in coordination and communication between the various entities involved with the transaction. These notifications follow the same procedure used by the other Request Distribution messages, described in section 3.6.2.

#### 3.6.4.1 *Distribution of Request Approval State*

A significant status event (an event triggering a State Distribution) is defined as one of the following:

- An Approver sets their State to DENIED, STUDY or APPROVED
- The Authority Service sets a Delivery state to INVALID or COMMFAIL

The distribution must contain the State of ALL entities with approval or viewing rights over the Request.

When a distribution is triggered, the Authority [Service](#) must wait five (5) seconds to verify no other changes are made to the States associated with the Request. If such changes are made, the distribution must be updated to include those changes. If the Denial or Study is overridden to APPROVED, the distribution must be aborted.

Distribution of a Request Approval State is handled as described in Section 3.6.4.

### **3.6.4.2 Distribution of Request Resolution**

The events triggering a Request Resolution Distribution are as follows:

- All Approvers have set their State to Approved, or
- The time for approval of the Request expires, or
- A requester withdraws the Request.

Given the above events, the following rules apply to determining the resolution of the Request:

- If a requester has withdrawn the Request, the Request is WITHDRAWN.
- If all approvers have set their State to Approved, the Request is APPROVED and the Composite State is CONFIRMED.
- If time has expired and any Approver's current State is DENIED, the Request is DENIED.
- If time has expired, and no Approver's current State is DENIED, and all Reliability Entity's current State is APPROVED, the Request is APPROVED.
- The individual status of any Market Entity whose current State is PENDING will be set to APPROVED and the Type will be set to PASSIVE when the Request State of the Request is APPROVED.
- If time has expired, and any Reliability Entity's current State is EXPIRED (or PENDING), the Request is EXPIRED.

When the Authority [Service](#) distributes a Request Resolution for a New e-Tag Request where the Composite State of the e-Tag is transitioning to CONFIRMED, the Authority [Service](#) must calculate and distribute the "ImplementTime" so that all Agent and Approval ~~services~~ [Services](#) know when the Authority [Service](#) is planning to make the transition from CONFIRMED to IMPLEMENTED.

Distribution of a Request Resolution is handled as described in Section 3.6.4.

### **3.6.4.3 Potential TLR Profile Change Distributions**

The Authority [Service](#) has no requirements with regard to the [warning message titled](#) Distribution of Potential TLR Profile Changes.

## **3.6.5 Recovery Functions**

### **3.6.5.1 Processing Synchronous Queries**

Synchronous Queries include the following:

- QueryTag

- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to process all synchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation return the requested data. Otherwise return a fault or error message

#### 3.6.5.1.1 Processing an e-Tag Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tag message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated.

#### 3.6.5.1.2 Processing a Request Ids Query

The following validation criteria must be checked when an Authority Service receives a Query Request Ids message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Request IDs Query message passes validation, the ~~authority~~ Authority Service should return the requested data ordered by Request State and then by Request creation time (oldest to most recent).

#### 3.6.5.1.3 Processing a Request Query

The following validation criteria must be checked when an Authority Service receives a Query Request message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 3.6.5.1.4 Processing a Request State Query

The following validation criteria must be checked when an Authority Service receives a Query Request State message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 3.6.5.1.5 Processing Queries for System Availability

~~Authorities~~ Authority Services should respond back to Queries for System Availability as follows:

- If the Authority Service is operating correctly, the Return Value should be SUCCESS.
- If the Authority Service is not operating correctly, the Return Value should be FAIL.
- If a known error Service is occurring, the Authority Service should indicate that error.

#### 3.6.5.2 Processing Asynchronous Queries

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to process all asynchronous queries:

- Decode the XML message and perform syntactic/semantic validation

- If the query passes validation, queue the Request for further processing and return a success response, otherwise return a fail response.
- Periodically read and process all queued queries. For each query, send a new (callback) message to the registered URL of the party that submitted the query. The callback message should contain the data that was requested by the previous Query message.
- If the callback message fails or encounters a fault response, attempt to resend the message using the process described in section 7.1.1.1.

Asynchronous responses must start within five minutes of query receipt.

#### 3.6.5.2.1 Processing e-Tag Summary Queries

The following validation criteria must be checked when an Authority Service receives a Query e-Tag Summary message:

- The Range specified for the query must not exceed twenty-~~four (24)~~ five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 24-25 hours of information.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once an e-Tag Summary Query message passes validation, the ~~authority~~ Authority Service should return the requested data ordered from oldest to most recent based on the users search criteria (Date Active or Date Modified). The ~~security key~~ Security Key used for the callback message should be the same ~~security key~~ Security Key that was used when the e-Tag Summary Query message was submitted.

When an approval or agent service requests recovery over an outage range, the service must create a list of unique ~~URL's~~ URLs for Authority ~~services~~ Services and send the Query Summary messages to each ~~authority service~~ Authority Service in order to retrieve all e-Tags for which that e-Tag ~~approval~~ Approval or ~~agent service~~ Agent Service is a party. For ~~Authorities~~ Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The ~~Tag Authority~~ Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the ~~Authority's~~ Authority Service's companies is listed as the intended message recipient.

#### 3.6.5.2.2 Processing an e-Tags Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tags message:

- The e-Tag Ids presented must be held by the Authority Service
- The e-Tag Keys associated with those e-Tag Ids must be valid keys associated with those e-Tags and with the querying entity
- The Return Rate must be greater than zero (0)

- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Query e-Tags message passes validation, the ~~authority~~ Authority Service should return the requested data ordered by e-Tag creation time from oldest to most recent. Each callback message should contain one or more e-Tags, but not more than the number of e-Tags specified in the Return Rate field of the Query e-Tags message. Each message may contain fewer than the requested number of e-Tags. The ~~security key~~ Security Key used for the callback message should be the same ~~security key~~ Security Key that was used when the e-Tag Summary Query message was submitted.

### 3.6.5.2.3 Processing an e-Tag History Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tag History message:

- The TagID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the queried e-Tag. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Authority Service should return all data to the caller, regardless of the message delivery status, except for retry messages (which should never be returned).

Once a Query e-Tags message passes validation, the ~~authority~~ Authority Service should return the requested data ordered by Call Time Stamp (oldest to most recent).

## 3.7 Availability and Performance

~~Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.~~

## **Section 4 – Tag Approval Functional Requirements**

The Authority Service must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, the Authority service must provide, at a minimum, the following:

- Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);
- Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);
- Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc.).

Providers of Authority Services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.

## Section 4 - Approval Service Functional Requirements

### 4.1 Introduction

All entities that may have “approval rights” over any Interchange Transaction shall provide the necessary hardware and software systems to implement the Approval Service. The Approval Service shall comply with all functional requirements set forth in this section. Approval entities may elect to comply with these Approval Service requirements using internally developed hardware/software; third party developed hardware/software, or third party subscription type services.

Approval shall be responsible for providing the following functions:

- Accept input e-Tag data transferred in compliance with this document from any Authority Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly (i.e., provide for positive acknowledgement of receipt of the e-Tag).
- Communicate approval, denial, study, and adjustment information to the Authority Service managing the e-Tag in compliance with this document.
- Receive notification messages from the Authority Service.
- Query the appropriate Authority Service for the current State of each Request submitted for approval.

Information systems designed to provide ~~more than one electronic~~ multiple e-Tagging ~~services~~ services (e.g., Authority and ~~Approvals~~) Approval Services), are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging related services provided by (or for) others.

### 4.2 Registry Usage

The Approval shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers (~~TSPs~~), ~~Balancing Authorities~~ (BAs), and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ A listing of all such entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. The Approval Service shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be maintained in a format defined by the NERC/NAESB Joint ~~Interchange Electric Scheduling Working Group~~ Subcommittee.

The Approval Service must support the receipt of unsolicited messages sent by ~~Authorities~~ Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ EIR and be capable of receiving e-Tag messages.

### **4.3 Tag Data Entry and Viewing**

The Approval [Service](#) is the main interface through which entities with approval rights to an e-Tag alert the e-Tag author and each other of their decisions to approve, deny, or change an e-Tag to reflect a valid representation of a scheduled transaction. To this end, the Approval [Service](#) shall provide a mechanism for a user to view, make changes, or modify the entity state(s), as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all transaction related information (as described in the Data Model) necessary to represent a complete, valid e-Tag.

### **4.4 Date and Time Handling**

The Approval [Service](#) shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59.

The Approval user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Approval [Service](#) is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### **4.5 Data Validation**

The Approval [Service](#) shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **4.6 Function Implementation**

The Approval [Service](#) is responsible for being able to call the following methods:

- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeTerminateTag
- DistributeProfileChange

- DistributeStatus
- DistributeResolution
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

### 4.6.1 Initiating a Request

The Approval [Service](#) may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ [EIR](#)) the Authority [Service](#) URL associated with the ~~load control area~~ [Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).

#### 4.6.1.1 Submitting a Correction Request

Write Request – Transmission Service Providers (~~TSPs~~) may submit e-Tag correction(s) if needed. The [TSP Transmission Service Provider](#) must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Approval [Service](#) may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to a TransProductRef must not only contain the TransProductRef, but also the Transmission Allocation ID, a reference to the Parent Segment, the OASIS Number, and the associated Transmission Customer.

The [TSP Transmission Service Provider](#) is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated [TSP Transmission Service Provider](#) (TPCode). The [TSP Transmission Service Provider](#) may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation may not be changed (either reduced or increased)

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may only be made to e-Tags that are PENDING
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the ~~TSP~~Transmission Service Provider must be informed of the error(s) by the Approval Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Approval Service must record these numbers for later reference and integrity verification.

#### **4.6.1.2 Submitting a Profile Change Request**

When requesting a setting of the reliability limit, the Approver may specify the profile at a specific physical segment. If the Approver does not specify a physical segment the default is the generator. The Authority Service will calculate the remaining profiles for all other upstream and downstream profiles. The Approver must provide any additional parameters necessary to successfully call the RequestProfileChange method. If requesting a clearing of reliability limits, the Approver must specify a start and a stop range for the clearing of the limit. ~~Approvals~~Approval Services are not allowed to submit Current Level profiles, as they are calculated by the Authority Service.

The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...).

In some cases the Market Operators may specify Market Level Profile changes rather than Reliability Limit Profile Changes. Specifying a Market Level Profile Change is completely acceptable provided the entity is a registered Market Operator and the Profile Change Request would modify a transaction that sources or sinks in the Market Operator's Balancing Area(s). Such use of the Market Level profile must ONLY be used by the Market Operator when market conditions are setting the flow of the transaction; reliability concerns must still be handled through the use of the Reliability limit. Market Operators must provide full sets of profile changes (i.e., not only the profile at the Generator, but all profiles along the scheduling path as well).

In the case of DYNAMIC e-Tags, the ~~sink~~Sink BA or ~~source~~Source BA may specify limit clearing and Market Level Profile changes. This is intended to allow the ~~LCA~~Sink or ~~GCA~~Source BA to set the energy level of the e-Tag to the metered (actual) interchange value. This type of modification is allowed ONLY for historic data up to 168 hours in the past. When any entity changes a market level, they must also supply all of the

profiles in the e-Tag. Changes to the reliability limit, with the exception of limit clearing, must not be allowed for DYNAMIC e-Tags if they are for a period more than one hour in the past.

The [TSP Transmission Service Provider](#) may also submit a Market Level Profile change and is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated [TSP \(TPCode\) Transmission Service Provider](#). The [TSP Transmission Service Provider](#) may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) nor the earliest start and end times.

The following validation criteria must be checked when an Approval Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may only be made to e-Tags with Composite States of CONFIRMED or IMPLEMENTED
- Profile Changes are not allowed for ATF e-Tags (they may be terminated)
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- [Profile change requests may not add or remove any entity.](#)

It is possible for a [TSP Transmission Service Provider](#) to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should the [TSP Transmission Service Provider](#) need to modify a transmission allocation then the [TSP Transmission Service Provider](#) must specify the change in the same manner in which profile change would be performed.
- The [TSP Transmission Service Provider](#) may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- The adjustment cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority [Service](#) receives the Request and the latest possible change ending at the Tag Stop Time.

## 4.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

### 4.6.2.1 *Processing a New e-Tag Request Distribution*

Verify Semantics – the following rules must be met in order to constitute a valid New e-Tag Request Distribution:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- A e-Tag with the ID presented must not already exist on the Approval [Service](#)
- An e-Tag designated as ATF must be clearly identifiable. The Approval [Service](#) user interface must be designed so that ATF e-Tags are differentiated/highlighted by color, text, or some other mechanism that ensures the e-Tag Approver is aware that the e-Tag is ATF.

### 4.6.2.2 *Processing a Correction Request Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tag creation Requests that do not have an Approval State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Approval [Service](#) must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the e-Tag Approver that the correction has occurred, highlighting the correction for their inspection
- Immediately consider any previous approval action (setting the approval State of the affected entity to either APPROVED, DENIED, or STUDY) to be reset

### 4.6.2.3 *Processing a Profile Change Request Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

### 4.6.3 Request Actions

The following procedure should be used by ~~approval services~~ Approval Services when taking actions on requests:

- Encode the message in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 4.6.3.1 *Approving and Denying Request*

The e-Tag Approver must indicate their decision to support or refute the Request. Valid Approval States are defined in Section 1.3.4.2. States of Denied and Study MUST be accompanied with reasons for the choice. States of Approved MAY be accompanied with reasons or comments. The Approver must specify the Request ID that is being acted upon, and must include their assigned Security Key in order for the SetState method call to be processed correctly.

The following validation criteria must be checked when ~~aan~~ Approval Service sends a Set Approval State message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The SetState call may not reference any Request that has already been resolved (i.e. has a current final state).
- States of Denied and Study must be accompanied by a reason
- ~~The version of data being corrected must be the most recent correction held by the Authority~~

#### 4.6.3.2 *Withdrawing a Request*

Approval ~~services~~ Services may withdraw profile change requests.

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority [Service](#) at the time the request was made.
  - –The original Security Key for the transaction that was used in the e-Tag Creation message.
  - ~~A reason that explains why the Withdrawal was made.~~
- Withdraw messages must not be sent for requests that have already reached a final state (APPROVED, etc.).
- Look up (in the Electric Industry Registry) the Authority [Service](#) URL associated with the ~~load control area~~ [Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).
- WITHDRAWN is a final states for the Request.

## 4.6.4 Approval Service Information Distribution

### 4.6.4.1 Processing a Request Approval State Distribution

The following validation criteria must be checked when an Approval Service receives a Distribute Status message:

- The e-Tag ID Referenced in the message must be one held by the Approval [Service](#)
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority [Service](#) initially transferred the New e-Tag Request to the Approval [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.4.2 Processing a Request Resolution Distribution

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the Approval [Service](#)
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority [Service](#) transferred the New e-Tag Request to the Approval [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.4.3 **Potential TLR Profile Change Distributions**

The Approval has no requirements with regard to the Distribution of Potential TLR Profile Changes.

## 4.6.5 Recovery Functions

### 4.6.5.1 **Synchronous Queries**

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 4.6.5.1.1 **Query for an e-Tag**

Tag approval service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request.

#### 4.6.5.1.2 **Query for Request Ids**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request. Optionally, the user may elect to filter RequestID's based on the resolution of the requests associated with the e-Tag (i.e., show only Activates Requests).

#### 4.6.5.1.3 **Query for a Request**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID they wish to retrieve.

#### 4.6.5.1.4 **Query for a Request's State**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID for which they would like State information.

#### 4.6.5.1.5 Query for System Availability

~~Tag approval service~~ Approval Service must specify a particular system for which to query availability (by entity desk and service type (Agent, Approval, Authority, ~~RAS~~ and RA Services)).

#### 4.6.5.1.6 Processing Queries for System Availability

~~Approvals~~ Approval Services should respond back to Queries for System Availability as follows:

- If the Approval Service is operating correctly, the Return Value should be SUCCESS.
- If the Approval Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Approval Service should indicate that error.

### 4.6.5.2 Asynchronous Queries

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag, or, for Query Summaries, identify a unique list (select distinct) of Authority ~~URL's~~ Service URLs. Send the XML message(s) created during the first step to this/these URL(s) as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message(s) from the Authority Service. The response message(s) will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Approval Service's registered service URL, and will include the same ~~security key~~ Security Key used by the Agent Service to submit the query. The Agent should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 4.6.5.2.1 Query Summaries

The ~~approval service~~ Approval Service must specify either an Active Range or a Last Modified Range for which they want e-Tag summaries to be returned. The Active Range is used to specify a range of time during which an e-Tag must have been "active" (i.e.,

either the first start date/time pair or the last stop date/time pair of the e-Tag is within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When either an approval Approval or agent-service Agent Service requests recovery over an outage range, the requesting service must create a list of unique URL's for Authority services Services URLs and send the Query Summary messages to each authority service Authority Service in order to retrieve all e-Tags for which that e-Tag approval Approval or agent-service Agent Service is a party. For Authorities Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Tag-Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority's Authority Service's companies is listed as the intended message recipient.

The User must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Approval Service submits a Query Summaries message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Range specified must not exceed twenty-~~four~~ five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 24-25 hours of information.

The following validation criteria must be checked when an approval-service Approval Service receives a Query Summaries Callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the Approval Service transferred the Summaries Query to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 4.6.5.2.2 Query e-Tags

The Agent service Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing security keys Security Keys can be recovered using the Query Summaries message. The User must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### 4.6.5.2.3 Query History

The Approval Service must specify a valid e-Tag ID and Security Key. The ~~security key~~Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the ~~security key~~Security Key provided by the Authority Service through a Distribute message. Missing ~~security keys~~Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Approval Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 4.7 Availability and Performance

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## Section 5 - Reliability Authority Service Functional Requirements

### 5.1 Introduction

RASsRA Services are used by Reliability Coordinators (RCs) to identify transactions for curtailment, reallocation, and reloading. Functions of a RASRA Service with regard to Reliability Authority and operations are determined by the NERC IDC Working Group or other industry groups. The information below describes the role of a RASRA Service with regard to the e-Tag system.

### 5.2 Registry Usage

RASsRA Services shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers (~~TSPs~~), ~~Balancing Authorities~~ (~~\_~~ BAs), and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ A list of all such entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. RASsRA Services shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be maintained in a format defined by the NERC/NAESB ~~Joint Interchange Scheduling Working Group~~ JESS.

#### RASs

RA Services must support the receipt of unsolicited messages sent by ~~Authorities~~ Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ EIR and be capable of receiving e-Tag messages.

### 5.3 e-Tag Data Entry and Viewing

User Interface rules for RASsRA Services are defined by the NERC IDC Working Group or other industry groups.

### 5.4 Date and Time Handling

RASsRA Services shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time~~ (~~UTC~~) prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59.

RASsRA Services' user interfaces are free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the RASRA Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### 5.5 Data Validation

RASsRA Services shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### 5.6 Function Implementation

The RASRA Service is responsible for being able to call the following methods:

- RequestProfileChange
- SetState
- DistributePotentialTLRProfileChange

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeResolution

Semantics, including calling and processing rules are described in detail in the following sections.

## 5.6.1 Initiating a Request

~~Reliability Authority services~~ RA Services may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### 5.6.1.1 Submitting a Profile Change Request

The following validation criteria must be checked when a ~~RAS~~ RA Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may **only** be made to e-Tags that have been CONFIRMED or IMPLEMENTED
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags, which must not affect points in time more than 168 hours in the past.

## 5.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations

- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

### **5.6.2.1 Processing a New e-Tag Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute New e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the [RASRA Service](#)

### **5.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that do not have a Composite State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

### **5.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

## **5.6.3 Information Distribution**

### **5.6.3.1 Processing of a Request Resolution Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the [RAS](#)
- [RA Service](#)
- The Security Key presented must be identical to the NERC-assigned Security Key for [RASRA Service](#) communications.
- The rules described in the Data Model and Method Descriptions sections must not be violated

### **5.6.3.2 Distribution of a Potential TLR Profile Change**

*Note – The following actions describe the role of the NERC Interchange Distribution Calculator (IDC) with regard to the generation of curtailment prescriptions. While other [RASs](#) [RA Services](#) may choose to implement this feature, it is not strictly required.*

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Agent Service URL associated with the PSE listed as the e-Tag author for the e-Tag impacted by the Potential TLR profile change

~~Agents~~ Agent Services may implement a callback mechanism to verify validity of the distribution, but are not required to do so.

The following validation criteria must be checked when a ~~RAS~~ RA Service receives a Potential TLR Profile Change callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the ~~RAS~~ RA Service transferred the Potential TLR Profile Change to the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

## **5.7 Availability and Performance**

Availability and Performance Requirements for the ~~RASs~~ RA Services are defined by the NERC IDC Working Group or other industry groups.

## Section 6 - Data Model Overview

### 6.1 Tag Data

#### 6.1.1 Transaction Types

E-Tag ~~1.7~~ recognizes the following transaction types:

**Normal:** These are the “normal energy schedules” and should be the largest number of schedules. They will include schedules that use point-to-point, network integrated transmission service, or grand-fathered service under a regional tariff. These schedules are included in the IDC and are subject to TLR curtailment.

**Dynamic:** A dynamic schedule is scheduled using an expected value but the actual energy transfer is determined in real time by separate communications external to the e-Tag system. Also included in this type will be regulation energy schedules and energy imbalance schedules. The e-Tag should contain the expected average energy in the energy profile and contain the maximum expected energy in the transmission allocation. Dynamic e-Tags may be adjusted by the source BA, sink BA, or e-Tag author up to 168 hours in the past using a market adjust to set the actual interchange value.

**Emergency:** Emergency Schedules, including reserve sharing, Spinning Reserve, and Supplemental Reserve may be scheduled as Emergency Schedule Type. Another kind of emergency schedules is execution of an operating guide that implements schedules in response to a loading problem. For example, an RTO based emergency re-dispatch that lasts longer than an hour involving multiple Balancing Authorities. Typically, EMERGENCY schedules would not require reservations before being used where Capacity Benefit Margin had been calculated to allow for this reserve sharing.

**Loss Supply:** Used for customers self-supply losses. This type is used to differentiate between a loss schedule and a normal schedule. Some tariffs presently require that schedules for losses require different treatment than schedules for the associated energy.

**Capacity:** Typically used for entities to import operating reserves from outside their reserve-sharing group but may also be used to arrange for purchases or sales of Spinning Reserve and Supplemental Reserve between other entities. This type of e-Tag may be activated upon contingency with zero ramp durations.

**Pseudo-Tie:** A dynamic transfer implemented as a pseudo-tie rather than a dynamic schedule. Used in the same way as a Dynamic e-Tag. These tags may be adjusted in the same manner as Dynamic transaction type e-Tags.

#### 6.1.2 Market Segments

Market Segments represent those portions of the path that are associated with the tracking of title and responsibility. A Physical Segment is always associated with a parent Market Segment. However, the opposite is not true; Market Segments can exist independent of Physical Segments.

Market Segments contain information that describes the market information, such as the identity of the market participant, the firmness of energy the market participant is delivering, and the physical segments the entity is responsible for providing. Market Segments must be listed in order from GPE to LSE and numerically identified as such (e.g., GPE segment = 1, Intermediate PSE segment =2, LSE segment = 3).

GPE and LSE segments must contain an energy product. Market Segments may only utilize products in the Electric Industry Registry related to Generation or Load.

### **6.1.2.1 Scheduling Responsibilities**

Market Segments can describe a responsibility for managing the scheduling for a portion of the transaction. This is seen when a marketer has rights to a resource and wishes to exercise those rights (i.e., a generation merchant wishes to generate energy for sale, a load serving entity wishes to consume energy based on a purchase, or a marketer wishes to physically move energy from one area to another). When this occurs, the market segment will contain the physical segments over which the marketer has scope.

### **6.1.2.2 Title Transfers**

Market Segments can also describe non-physical title transfers. These are seen when a market participant takes financial possession for the energy commodity, but does not physically move that energy before transferring possession to another financially responsible party. When this occurs, the market segment will not contain any physical segments.

### **6.1.3 Physical Segments**

Physical Segments represent those portions of the path that are physical in nature and represent a movement of energy. There are three types of physical segment: Generation, Transmission and Load. Physical segments must be listed in order from generation to Load and numerically identified as such (i.e., Generator segment = 1, first ~~TSP~~Transmission Service Provider segment =2, second ~~TSP~~Transmission Service Provider segment = 3, Load segment = 4). Generation segments must always be listed first, while Load segments must be listed last. E/\*-Tags may only have one Generation segment and one Load segment. All physical segments must reference a parent market segment, identifying the market entity responsible for the physical segment. These references must also be in an order that matches that described by the market segments. For example, the following represents a valid description of a transaction:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 2  
Load: Physical Segment 3, Parent Market Segment Ref 3

In this example, the chain of ownership and physical path are aligned properly. When combined, the results identify a clear tracking of title and scheduling path:

GPE: Generator  
PSE: Transmission  
LSE: Load

However, the following example is invalid:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 3  
Load: Physical Segment 3, Parent Market Segment Ref 2

In this example, the references indicate a paradox: when combined, invalid results are produced:

GPE: Generator  
PSE: Load ←out of sequence  
LSE: Transmission ←out of sequence

Such cross references are invalid.

### **6.1.3.1 Generation**

Generation Segments contain information that describes a generation resource, such as the location of the generation, the firmness of the energy supplied by the resource, and contract references that identify the resource commitment. Generation Segments may only utilize products in the Electric Industry Registry related to Generation.

### **6.1.3.2 Transmission**

Transmission Segments contain identification that describes a transmission service, such as the identity of the provider, the POR and POD of the service, the firmness of the service, simple loss information, and contract references that identify the service commitment. Transmission Segments may only utilize products in the Electric Industry Registry related to Transmission.

#### **6.1.3.2.1 Scheduling Entities**

Scheduling Entities must be registered as Balancing Authorities in the Electric Industry Registry. Many Transmission Service Providers require that e-Tags illustrate not only the contractual relationship between the Transmission Service Provider and the transmission customer, but also the internal scheduling information to implement the transmission service sold under their tariff. To this end, Scheduling Entities may be defined for a particular Transmission segment. These entities must be listed in the proper scheduling path order (for example, importing BA, intermediate BA, exporting BA).

In the event a listed POR or POD in the Transmission Segment is listed in the Electric Industry Registry as being a DC Tie, then its registered Balancing Authority must be listed in the e-Tag as a scheduling entity.

NERC/NAESB Standards indicates that Scheduling Entities are optional items in an e-Tag. While there is no requirement in this Specification (or the XML Schema associated with it) that Scheduling Entities be listed, it should be noted that NERC/NAESB Standards requires that scheduling paths be contiguous and verified by all scheduling entities before an e-Tag is approved. Failure to include the proper scheduling entities (or failure to include them in the proper order or location) will likely result in a denied e-Tag.

### 6.1.3.3 Load

Load Segments contain information that describes a load, such as the location of the load, the interruptability of the load, and contract references that identify the load obligation. Load Segments may only utilize products in the Electric Industry Registry related to Load.

### 6.1.4 Profile Sets

Profile Sets define the level at which transactions should run, as well as the factors that set those levels. Profiles are specified as a series of time-ordered segments of duration associated with a particular profile type or types. These segments may be repeated on multiple days, if so desired. Profiles are specified as either *relative* or *absolute*, depending on the type of profile.

A *Relative* profile is described through the use of two or more values which, when combined, create a matrix of profiles. For example, a relative profile may specify a set of reference date-times (01/01/2001 06:00:00, 01/02/2001 06:00:00,) and a set of offsets relative to that date-time (00:00, 02:00, and 04:00). When multiplied together, the resultant matrix is as follows:

	01/01/2001 06:00:00	01/02/2001 06:00:00
00:00	<b>01/01/2001 06:00:00</b>	<b>01/02/2001 06:00:00</b>
02:00	<b>01/01/2001 08:00:00</b>	<b>01/02/2001 08:00:00</b>
04:00	<b>01/01/2001 10:00:00</b>	<b>01/02/2001 10:00:00</b>

Doing so reduces the size of the data significantly (in this case, instead of six explicit date times, only two explicit date times must be supplied, along with three simple time offsets).

An *Absolute* profile is described through the use of explicit date times. The above example, defined through absolute profiles, would be as follows:

<b>01/01/2001 06:00:00</b>
<b>01/01/2001 08:00:00</b>
<b>01/01/2001 10:00:00</b>
<b>01/02/2001 06:00:00</b>
<b>01/02/2001 08:00:00</b>
<b>01/02/2001 10:00:00</b>

While more verbose, the use of such profiles is more effective when only small profiles are to be specified, or when explicit dates in a relative profile must be referenced.

In all cases, start times must always be earlier than their associated stop times.

Both Relative and Absolute profiles may optionally contain ramp duration (in minutes) associated with both start time and stop time. The ramp stop time is not needed (and is ignored) in any profile except for the last profile. The ramp duration specifies the number of minutes over which the generator will change from the previous block level to the current block level. Interchange schedule ramping is executed between BAs using straddle ramp methods as defined above. The ramp duration exists in the e-Tag in order to provide a vehicle by which ramp duration may be exchanged between entities.

Ramps may not overlap. Agent ~~Software, e-Tag~~, Approval ~~Software~~, and Authority Service software must include at least this validation plus any validation required by NERC, NAESB, or RRO standards.

### **6.1.4.1 Profile Types**

There are five main types of profiles: Market Level, Reliability Limit, Dynamic Minimum Energy, Dynamic Maximum Energy, and Current Level.

#### **6.1.4.1.1 Market Level**

The Market Level defines the level at which the e-Tag author wishes the transaction to run. This level can be used to specify an initial value for a dynamic schedule, as well as a simple level at which the transaction is to be run.

#### **6.1.4.1.2 Reliability Limit**

The Reliability Level defines the maximum allowable level at which a transaction may run when that transaction has been identified by a Reliability Coordinator or other reliability entity as being limited by some constraint. This limit is typically used to indicate curtailments.

#### **6.1.4.1.3 Dynamic Minimum Energy**

Dynamic Minimum Energy specifies a level at which a Dynamic Schedule must minimally run. This level is provided for information purposes only.

#### **6.1.4.1.4 Dynamic Maximum Energy**

Dynamic Maximum Energy specifies a level at or under which a Dynamic Schedule must run. This level is provided for information purposes only.

#### **6.1.4.1.5 Current Level**

Current level contains the level at which the transaction should be running based on all approved Requests processed in order of receipt by the Authority Service.

### **6.1.4.2 Profile Usage**

The above-described profiles can be used in two different ways: as Base Profiles and as Exception Profiles.

**6.1.4.2.1 Base Profiles**

Base Profiles describe the initially requested profile for implementation. At no time should there be more than one base profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from 6-22 and 8-12 for the same provider). Note that it is acceptable for profile types associated with Dynamic Schedules to overlap (i.e., Dynamic Minimum 0MW from 6-22, Dynamic Maximum 100MW from 6-22, MarketLevel 80MW from 6-22).

Different types of transactions have different Base Profile requirements:

PROFILE TYPE	REQUIRED DATA FOR BASE PROFILE
GENERATION	MARKET LEVEL DYNAMIC MINIMUM ENERGY (for Dynamic Schedule Types) DYNAMIC MAXIMUM ENERGY (for Dynamic Schedule Types)
TRANSMISSION POR	MARKET LEVEL
TRANSMISSION POD	MARKET LEVEL
LOAD	MARKET LEVEL

The Authority Service will calculate the Base Current Level profile. It is not valid for a Profile Change to contain a Base Profile.

**6.1.4.2.2 Exception Profiles**

Profile Modifications, or Exceptions, describe changes to the profile of the e-Tag that must be implemented in place of the original profile for a specified period of time. In all cases, the requested modification to the profile must go through an approval process. At no time should there be more than one exception profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from Hours Ending 6-22 and Hours Ending 8-12 for the same provider). While it is possible to request an exception that overlaps a previous exception, the end result will be a single exception profile that covers the union of the prior exception and the new exception.

It is not valid for either a New~~new~~ e-Tag or a Correction to contain an Exception Profile. The Services are responsible for determining the appropriate Current Level based on the profiles in their possession and generating the Current Level Profile.

**6.1.4.2.2.1 Market Level Exceptions**

A Market Level Exception defines the maximum level at which the e-Tag Author wishes the transaction to run if it differs from the original Market Level. This value is designed to allow the e-Tag Author to change the level of flow for a transaction, but continue to keep the capacity committed as originally specified. In so doing, the e-Tag Author reduces the need for detailed evaluation by Transmission Service Providers, as the originally requested transaction already specified appropriate transmission resources.

**6.1.4.2.2.2 Reliability Limit Exceptions**

The Reliability Limit defines the maximum level at which a Reliability Coordinator, Balancing Authority, or Transmission Service Provider wishes to run the transaction if it differs from the Market Level. This level is designed to change the level of flow for a transaction due to TLR events, USF, loss of generation, and loss of load.

## 6.1.5 Transmission Allocations

Transmission Allocations are a special kind of profile set that defines the way in which market participants will fill their capacity commitments with transmission reservations. Transmission Allocations specify a particular reservation, the provider associated with the reservation, and profiles associated with that reservation that describe how the reservation should be consumed. Transmission Allocations must always be associated with Transmission Physical Segments; association with other segments (such as Generation or Load) is not allowed. The Maximum Reservation Capacity associated with each physical segment should be greater than or equal to the energy profile. This is validated by the Tag-Authority [Service](#) for new Tag creation requests only. Validation of subsequent adjustment Requests by the Authority [Service](#) is problematic due to sequencing and approval issues.

The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.

There are two types of profiles, both specified with Maximum Reservation Capacity profiles: Base Allocation Profiles, and Exception Allocation Profiles.

### 6.1.5.1 **Base Allocation Profiles**

Base Allocation Profiles define the original manner in which transmission reservations were allocated to meet capacity commitments. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed. These segments may be repeated on multiple days, if so desired.

### 6.1.5.2 **Exception Allocation Profiles**

Exception Allocation Profiles define the manner in which transmission reservations are allocated to meet capacity commitments during changes to a Base Allocation Profile. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed, and supersede data supplied in their corresponding base profile.

## 6.1.6 Loss Accounting

Loss Accounting data specifies the manner in which losses should be accounted for over a specified period of time. Over time, an e-Tag Author may elect to specify different choices for how losses will be provided. Each specification creates (or overwrites) Loss Method Entries, which are used to determine how losses are to be applied.

## Section 7 - Messaging Overview

### 7.1 Messaging Concepts

#### 7.1.1 Use of the Transmission Control Protocol/Internet Protocol

The services defined in this document utilize the public Internet as their physical communication layer. Therefore, the underlying root protocol for this specification shall be Transmission Control Protocol/Internet Protocol or TCP/IP. Utilization of Hypertext Transfer Protocol Secure or HTTPS ~~based on using~~ NAESB PKI standard compliant certificates is ~~expected to be required~~. The requirement for NAESB PKI standard compliant client certificates will be phased in over time as infrastructure, such as the Electric Industry Registry, are available to support the implementation. Additionally, the services defined in this document shall send data via both Port 80 and 443, the common known port for HTTP and HTTPS respectively, or any other port specified in the URL supplied in the registry, using TCP connections. The use of HTTP or HTTPS will be based on the fully qualified URL. For HTTPS connections, a client certificate may be used. The recipient of an HTTPS connection must verify that the client certificate presented (if one is present) is valid for the sending entity.

When participating entities register for service, they will be required to supply information on the manner in which their implementation will address certain needs. Explicitly, they will need to define:

- URL, Certificate Issuer, and Common Name for Authority Service (~~Balancing Authorities~~ BAs only)
- URL(s) for Reliability Authority Coordinator Forwarding (~~Balancing Authorities~~ BAs only)
- URL, Certificate Issuer, and Common Name for Approval Service (~~Balancing Authorities~~ BAs, Transmission Service Providers, and optionally Purchasing Selling Entities PSEs)
- URL, Certificate Issuer, and Common Name for Agents (~~Purchasing Selling Entities~~ Agent Services (PSEs and optionally ~~Balancing Authorities~~ BAs)

For the purposes of this document, a URL (~~Uniform Resource Locator~~) can be considered a two-part description of a resource. The first part describes the scheme used to communicate and the host the communication is to take place with:

~~http://www.nerc.com~~ http://www.nerc.com or https://www.nerc.com

The second part is the ~~URI, or~~ Uniform Resource Identifier (URI). It describes a particular resource on a host:

/~gads/meetings.html

This distinction is important in that when implementing this Interface, the first portion of a URL will define the host to connect to, while the URI will define what resource to apply HTTP or HTTPS request to. Therefore, the following URL:

~~http://www.nerc.com/~gads/meetings.html~~

http://www.nerc.com/~gads/meetings.html

would be interpreted in the following manner:

<TCP/IP command> connect to “www.nerc.com”  
<Application specific command> write the HTTP request to the connection

In the above example, the request would be:  
“GET /~gads/meetings.html HTTP/1.1”

Both client and server certificates used for e-Tag communications must be compliant with NAESB PKI standards.

### 7.1.1.1 **Establishing Connections**

Establishing connections should be handled in the manner defined by the TCP/IP protocol.

**For automated responses to queries, automated distributions, and other actions not specifically initiated by a person’s action (CallbackHistory, CallbackSummaries, CallbackTags, DistributeCorrection, DistributeNewTag, DistributePotentialTLRProfileChange, DistributeResolution, DistributeProfileChange, DistributeStatus, RequestProfileChange\*):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must follow the procedures below prior to assuming the recipient’s service is unavailable and indicating a message failure:

At least three (3) attempts must be made to make the connection, with no less than five (5) seconds between each attempt, with the maximum time between the first and last attempts not to exceed two (2) minutes.

**For actions specifically initiated by a person’s action, such as Requests, Actions, and Queries (QueryHistory, QueryRequest, QueryRequestIDs, QueryStatus, QuerySummaries, QueryTag, QueryTags, RequestCorrection, RequestNewTag, RequestProfileChange\*, SetState, WithdrawRequest):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must assume the other service is unavailable and *immediately* indicate a message failure.

In both cases, message failures must alert the operator of the service attempting to send the message.

\*If an automated system is issuing RequestProfileChange (i.e., an RAS), then the system *must* retry the connection. If the issuer is a person or operator, the system *must not* retry the correction, and instead alert the operator of the failure.

#### 7.1.1.1.1 **Partial Connection Failures**

Should a connection attempt appear to fail between the Agent, Authority, and/or ~~Approvals~~ Approval Services, yet messaging succeeded, an invalid set of errors may be encountered by re-sending the same message (i.e., e-Tag ID Not Unique errors), leading

the sender to report incorrect error information. Should such a message duplication be attempted, the receiving service must respond back with a return State of DUPLICATE, and return any original additional response data back to the user (i.e., information other than that contained in the ReturnState data structure). This requirement does not apply to messages that it is valid to send multiple times such as query messages.

A message shall be considered a duplicate if

- The method called is the same as the previous message and,
- The entire MessageInfo data collection is the same as the previous message.

It should be noted that this behavior may only occur when messages are duplicates. For instances where a request is made and the information is *not* duplicated, the message must either be processed as a new message or marked as an error, depending on the specific situation (for example, submitting a new e-Tag with a previously submitted e-Tag ID is invalid, but submitting a new Profile Change must be processed normally).

#### 7.1.1.1.2 Combining Messages

Previous versions of e-Tag allowed for the combining of messages in order to reduce messaging overhead. For ~~Balancing Authorities~~ **BAs**, Transmission Service Providers, and ~~Purchasing/Selling Entities~~ **PSEs**, this functionality is no longer supported; for each specific entity, a distinct and separate message must be sent. For ~~Reliability Coordinators~~ **RCs**, it is still allowed to send one message per unique forwarding URL.

## 7.1.2 Use the Hypertext Transport Protocol

e-Tag messaging is accomplished through the use of the Hypertext Transport Protocol (HTTP) over the public Internet, optionally using SSL (HTTPS). The e-Tag services defined in this document utilize HTTP 1.1.

### 7.1.2.1 HTTP/S Requests

The services defined in this document utilize a single HTTP method: the POST method. This method is used for sending data to a server for processing. The standard format of an HTTP Request Header is as follows:

<HTTP method> <resource URI> <HTTP Version>

In this implementation, all Request Headers will exist as the following:

POST <resource URI> HTTP/1.1

This specifies the POST method is to be used, the path and name of the processing resource, and that using HTTP 1.1 is the protocol and version being used. Additional header fields required are described below:

Content-type: text/xml

Declares that the type of data attached to the POST request will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient utilizes this byte length to retrieve the Payload

SOAPAction:NERCETag18:<method name>

Indicates that the action being requested is part of the NERC e-Tag 1.8 library of methods, and specifies the method being called.

A Carriage Return/Line Feed terminates each header line. The request is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP headers, followed by the Entity Data or Payload.

### 7.1.2.2 HTTP/S Responses

HTTP Responses are returned to a client with the following syntax:

<HTTP Version> <State Code> <Explanation>

The State codes below are utilized and understood by the ~~HS~~e-Tag services defined in this document:

200	OK	States that the POST request was accepted and appears to be valid
400	Bad Request	States that the POST request was accepted but appears to point to an invalid URI or does not contain a valid Content-Type

Successful responses will be followed with an entity descriptor, describing the data to follow:

Content-type: text/xml

Declares that the type of data attached to the response will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient uses this byte length to retrieve the Payload.

A Carriage Return/Line Feed terminates each response line. The response is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP response, followed by the Entity Data or Payload. The payload for the purposes of this document shall be an e-Tagging Messaging Protocol message.

The server terminates the connection when the last of the payload has been transmitted.

### 7.1.3 How SMXP Works

All e-Tag 1.8 messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, you invoke procedures on remote machines, and pass any needed data as input parameters to the function. When the function is complete, it returns the result of its processing. The SMXP protocol is layered on top of the HTTP protocol, which handles all of the underlying communication. SMXP defines the set of rules for

encoding remote procedure call parameters into HTTP POST messages, as well as the set of rules for how such messages must be processed by a remote server.

The steps of executing an SMXP method are as follows:

- A request is generated, containing the method name and any needed parameters.
- The request is sent via HTTP to a listener on the remote machine.
- The remote machine receives the SMXP request, and examines it to determine which method must be executed.
- The remote machine executes the appropriate method and packages the result into an SMXP compliant XML document.
- The remote machine returns that document to the calling machine (again via HTTP).

Each SMXP method call has two important parts – the request and the response. Most of the methods used in e-Tag 1.7 are *synchronous* methods, meaning that once the calling machine makes a request, it waits for a response containing the results of its request before continuing.

In a few cases, *asynchronous* methods are used. In an asynchronous method, a request is generated and sent to a remote machine. The remote machine places the request into a queue, and sends a response to the calling machine that indicates the request has been received and queued for processing. The connection is then terminated. At some point in the future, the remote server runs the requested method and sends the result to the calling machine via a separate SMXP message (requiring a second request/response pair). Electronic e-Tagging systems are only required to support the processing of one method call per connection session. Multiple calls per session are not supported.

## 7.1.4 Method Types

E-Tag 1.7 uses various types of methods for various purposes. The methods can be broken up into the following categories.

### 7.1.4.1 **Requests**

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

### 7.1.4.2 **Request Distributions**

Request Distributions are the methods used to send requests to the all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

### 7.1.4.3 **Actions**

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### **7.1.4.4 Information Distributions**

Informational distributions are the methods used to send information related to the State of a particular request or set of transactions. These are sent to entities to alert them of particular requests implementation or withdrawal, as well as specific entities approvals and denial of a request.

#### **7.1.4.5 Queries**

Query methods are used to search and recover data from an Authority [Service](#) or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query. Queries may be sent more than once for the same data, however, Queries sent more than five times for the same data may be rejected.

#### **7.1.4.6 Callbacks**

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

### **7.1.5 Faults**

Fault messages are returned by any SMXP method that does not complete due to a structural error in the request. Such errors include any schema validation errors, such as incorrect data types and bad element ordering. Faults are also generated by message syntax errors, namespace errors, and some types of communication error. Fault messages indicate that processing was terminated before the requested procedure could be run. The SMXP specification defines the standard format and content for fault messages. Operators of the service attempting to send the message must be alerted to the receipt of any faults.

### **7.1.6 Return Values**

Each method returns a State code that reports whether or not the method call was successful. A Return value of "SUCCESS" indicates that there were no errors in the method invocation, and that valid data was passed into the method. A value of "FAIL" indicates that that the method did not run successfully. If the State code is set to "FAIL", then an error message must be included which describes the error that was encountered. Operators of the service attempting to send the message must be alerted to the receipt of any FAIL returns.

In certain cases, the method may return a value of "DUPLICATE." This value indicates that the method being called has been previously called with identical parameters and a response has already been returned. Typically, this value is received after a partial connection failure and subsequent retry.

## 7.1.7 Error Messages

Error messages are generated whenever a method does not complete successfully due to problems with provided parameters or execution of the query (unless the problems have already been defined by a fault or HTTP error message). If an error message is present, the State code must have a value of "FAIL". Error messages indicate that the method was executed, but was unable to fulfill the caller's request due to problems encountered during the processing of the request. Error messages can be caused by passing invalid (but syntactically correct) data to a method or by internal system failures or outages.

## 7.2 Method Descriptions

The six fundamental method types align with the system concepts defined in Section 1 of this document. Those types are Requests, Request Distributions, Request Actions, Information Distributions, Queries, etc. Details about the exact composition of these various data elements are defined in the latest e-Tag schema .

### 7.2.1 Special Data Structures

Some methods require specific data structures. In cases where the structure is unique to a particular method, the structure will be defined with the method description. Other generic structures are defined below.

#### 7.2.1.1 Tag ID

Tag IDs are values that uniquely identify an e-Tag. It is composed of four values:

- The Source BA's ~~NERC Acronym~~
- Entity Code
- The ~~Purchasing-Selling Entity's NERC Acronym~~ authoring PSE's Entity Code
- ~~A reference code~~ The e-Tag Code assigned by the PSE to aid in identification of the transaction
- The Sink BA's ~~NERC Acronym~~ Entity Code

The combination of these values must uniquely identify the e-Tag. At no point in time may two active e-Tags exist with the same e-Tag ID. To ensure this, an e-Tag ID may NOT be "reused" until a minimum of one (1) year has passed since the last point in time in which the e-Tag previously using the e-Tag ID ran.

#### 7.2.1.2 Message Info

Message Info is a collection of data used to describe the basic communication characteristics of an e-Tag message. Message info is composed of four values:

- The ~~NERC Acronym~~ Entity Code of the entity initiating the message transfer
- The Security Key used to ensure validity of the message
- The ~~NERC Acronym~~ Entity Code of the entity to whom the message is being transferred
- A date and time indicating when the message was generated

This information must be used to identify message participants, as well as provide simple authentication and audit information.

### 7.2.1.3 Return State

Return State is a collection of data used to indicate the general results of a message being processed. Return State has three specific components:

- A date and time indicating when the return was generated
- A State of the processing
- Optionally, a list of errors encountered during the processing of the message

This information must be used to communicate semantic problems with a message back to a message initiator.

### 7.2.1.4 Miscellaneous Info

In many messages, it is possible to communicate token/value pairs of non-standard information. This is included as a convenience and method for extending the e-Tagging system. By using the Miscellaneous Info function, entities can pass along data to other parties that *isare* not directly supported by the data model. For example, when initiating a curtailment request, an entity could provide various other information components, such as:

IMPACTED FLOWGATE : 1178

PROCEDURE : LLR

It is intended that entities make use of this feature in a standard, published manner that will allow recipients to process and utilize the information transferred.

## 7.2.2 Errors and Error Lists

The following are errors that may be supplied by the recipient of a method call should an error condition exist. The responder must provide an error number and a textual description of the error that provides specific detail about the error (i.e., information that will help the user resolve the problem). Supported errors are:

0001	Tag Already Exists	The e-Tag ID provided has already been used on an e-Tag held by the responding service.
0002	Tag Not Found	The e-Tag ID referenced is one not held by the responding service.
0003	Segment Not Found	The Segment referenced is not one held by the responding service
0004	Request Not Finalized	The profile cannot be changed, as it has not yet been finalized.
0005	Request Finalized	The e-Tag cannot be corrected or withdrawn, as it has already been finalized (CONFIRMED, IMPLEMENTED, etc.)
0006	Request Not Found	The referenced request is not one held by the responding service
0007	Stale Request	The request is inappropriate due to timing requirements.
0008	Invalid Range	The range specified exceeds or otherwise

		violates the rules associated with its definition
0009	Invalid Security Key	The <del>security key</del> Security Key provided is not correct
0010	Tag Not Requested	The e-Tag being presented is not one requested by the responding service
0011	Insufficient Rights	The requester does not have appropriate rights
0012	Contact Not Specified	A contact is required to be specified, and was not provided
0013	Reason Not Specified	A Reason is required to be specified, and was not provided
0014	Invalid Return Rate	The Return Rate was either not specified or incorrectly formatted
0015	Correction not allowed	The proposed correction would change the physical or financial path, which is not allowed.
0016	Missing Correction	The SetState request cannot complete because the Approver does not have the most recent correction for the segments in their scope.
0017	Missing DC Tie Operator	The RequestNewTag method cannot complete because a Balancing Authority registered to operate a requested DC Tie was not included as a Scheduling Entity for the Transmission Service Provider in the e-Tag.
0018	Orphan Profile	Every Profile must be reference by at least one Physical Segment
0019	Profile Not Found	The profile being referenced was not found in the e-Tag
0020	Invalid Path Order	The Market Segments, Physical Segments, and Parent market Segment References must be in correct order.
0021	Invalid Registered Value	A registered value is incorrect. This includes invalid or incorrect to/from entities, deactivated or unregistered PORs/PODs and/or Sources/Sinks, and non-existent products.

## 7.2.3 Initiating a Request

### 7.2.3.1 Special Data Structures

#### 7.2.3.1.1 TimeClassification

Used to indicate to an e-Tag Author that a request was received ~~on~~On-time, Late, or ATF based on the [timing tables in the NERC/NAESB Standards](#)~~timing guidelines~~.

### 7.2.3.2 Request New Tag

Issued by: ~~Agents~~Agent Services

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to submit a new e-Tag to the Authority Service for processing.

In	Message Info	Required
	Tag	Required
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0001 Tag ID Already Exists	
	0007 Stale Request	
	0017 Missing DC Tie Operator	
	0018 Orphan Profile	
	0020 Invalid Path Order	
	0021 Invalid Registered Value	

### 7.2.3.3 Request Correction

Issued by: ~~Agents~~ Agent Services

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to submit changes to a new e-Tag while it is being evaluated ~~for~~ approval by Approval Entities

In	Message Info	Required
	ContactInfo	Required
	Tag ID	Required
	Correction List	Required
	Notes	Optional
Out (successful)	Return State	
	Correction ID Set	
Errors	0002 e-Tag ID Not Found	
	0003 Segment Not Found	
	0005 Request already in Final state	
	0009 Invalid Security Key	
	0015 Correction Not Allowed	
	0021 Invalid Registered Value	

### 7.2.3.4 Request Profile Change

Issued by: ~~Agents, Approvals, RASs, Approval, RA Services~~

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to change the energy level or transmission allocation associated with a particular e-Tag.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Market Profile Change OR Reliability Profile Change	Required
	Miscellaneous Info List	Optional
	Notes	Optional
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0002 e-Tag not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not Specified	
	0013 Reason not Specified	
	0019 Profile Not Found	
	0021 Invalid Registered Value	

## 7.2.4 Request Distribution

### 7.2.4.1 Special Data Structures

#### 7.2.4.1.1 Approval Rights Flag

Used to indicate that a recipient of a request distribution has approval rights over the request.

#### 7.2.4.1.2 Impact Flag

Used to indicate that a recipient of a correction request distribution has a need to re-evaluate the e-Tag based on the correction.

### 7.2.4.2 Distribute New e-Tag

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute ~~new~~ New e-Tag ~~requests~~ Requests to parties with rights to view or approve the request.

In	Message Info	Required
	Tag	Required
	Approval Rights	Required
	Late	Optional
Out (successful)	Return State	
Errors	0001 e-Tag already exists	
	0021 Invalid Registered Value	

### 7.2.4.3 Distribute Correction

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute a correction to parties with rights to view or approve the original ~~new~~ New e-Tag ~~request~~ Request.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Correction List	Optional
	Loss Accounting List	Optional
	Impact Flag	Required
	Late Flag	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0003 Segment Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.4.4 Distribute Profile Change

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute a request to change a profile to the parties with rights to view or approve the original ~~new~~ New e-Tag ~~request~~ Request.

In	Message Info	Required
	Contact info	Required
	Tag ID	Required
	Approval Rights	Required
	Request ID	Required
	Requestor	Required
	Late	Required
	Exception Profile Change	Optional
	Transmission Allocation Change List	Optional
	Loss Accounting Change List	Optional
	Misc Info list	Optional
	Notes	Optional
	Request Time Stamp	Required
Out (successful)	Return State	

Errors	0002 e-Tag Not Found
	0009 Invalid Security Key
	0021 Invalid Registered Value

## 7.2.5 Request Actions

### 7.2.5.1 Set State

Issued by: ~~Approvals~~ Approval Services

Processed by: ~~Authorities~~ Authority Services

**Purpose:** Used by entities with Approval Rights to a request to specify their commitment to implement or reject the request.

In	Message Info	Required
	Tag ID	Required
	Scope	Required
	Request Ref	Required
	Approval Status	Required
	Approval Time Stamp	
	Notes	Optional*
Out (successful)	ReturnState	
Errors	0002 e-Tag Not Found	
	0003 Segment not Found	
	0005 Request Finalized	
	0009 Invalid Security Key	
	0013 Reason not Specified	
	0016 Missing Correction	
	0021 Invalid Registered Value	

\*Required for states of Denied or Study.

### 7.2.5.2 Withdraw Request

Issued by: ~~Agents, Approvals, Approval,~~ and ~~RASs~~ RA Services

Processed by: ~~Authorities~~ Authority Services

**Purpose:** Used by request authors to remove their request from consideration prior to the completion of its evaluation.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	

	0005 Request Finalized
	0006 Request not found
	0009 Invalid Security Key
	0011 Insufficient Rights
	0012 Contact not specified
	0021 Invalid Registered Value

### 7.2.5.3 Terminate Request

**Issued by:** ~~Agents, Approvals~~ Agent and Approval Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used by request authors to set the transmission and energy profiles of an e-Tag to zero and set its state to TERMINATED after the request has transitioned to IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	DateTime	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not specified	
	0021 Invalid Registered Value	

## 7.2.6 Information Distribution

### 7.2.6.1 Distribute Status

**Issued by:** ~~Authorities~~ Authority Services

**Processed by:** ~~Agents, Approvals, Approval,~~ and ~~RASs~~ RA Services

**Purpose:** Used to notify entities with Approval and Viewing rights of other Approver's actions with regard to a particular request.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required

	Status List	Required
	Flowgate List	Optional*
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.2 *Distribute Resolution*

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs, Approval, RA Services~~

**Purpose:** Used to notify entities with Approval and Viewing rights of the final resolution of a particular request.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
	Request Status	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.3 *Distribute Potential TLR Profile Change*

Issued by: ~~RASs~~ RA Services

Processed by: ~~Agents~~ Agent Services

**Purpose:** Used to inform e-Tag Authors about potential impending profile changes due to TLR.

In	Message Info	Required
	Start Date Time	Required
	TLR Event Ref	Required
	Misc Info list	Optional
	TLR Profile Change List	Required
Out (successful)	Return State	
Errors	0021 Invalid Registered Value	

### 7.2.6.4 *Callback Potential TLR Profile Change*

Issued by: ~~Agents~~ Agent Services

Processed by: ~~RASs~~ RA Services

In	Message Info	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

## 7.2.7 Query Functions

### 7.2.7.1 Query Summaries

**Issued by:** Agents, Approvals, RASs, Approval, RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to request a list of e-Tags and keys based on search criteria. Primarily used for recovery purposes.

In	Message Info	Required
	Range	Required
Out (successful)	Request ID	
Errors	0008 Invalid Range	
	0021 Invalid Registered Value	

### 7.2.7.2 Callback Summaries

**Issued by:** Authorities Authority Services

**Processed by:** Agents, Approvals, RASs, Approval, RA Services

**Purpose:** Used to send a list of e-Tags and keys to an entity that has previously requested via QuerySummaries.

In	Message Info	Required
	Tag Summary List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.3 Query e-Tag

**Issued by:** Agents, Approvals Agent Services, Approval, and RASs RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to retrieve a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
----	--------------	----------

	Tag ID	Required
Out (successful)	Return State	
	Tag	
Errors	0002 e-Tag not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

#### 7.2.7.4 Query e-Tags

**Issued by:** ~~Agents, Approvals, RASs, Approval, RA Services~~

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to request multiple e-Tags from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag Credential List	Required
	Return Rate	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0014 Invalid Return Rate	
	0021 Invalid Registered Value	

#### 7.2.7.5 Callback e-Tags

**Issued by:** ~~Authorities~~ Authority Services

**Processed by:** ~~Agents, Approvals, RASs, Approval, RA Services~~

**Purpose:** Used to send multiple e-Tags from an Authority Service to an entity that requested them via QueryTags. Primarily used for recovery purposes.

In	Message Info	Required
	Tag List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0010 e-Tag Not Requested	
	0021 Invalid Registered Value	

#### 7.2.7.6 Query History

**Issued by:** ~~Agents, Approvals, RASs, Approval, RA Services~~

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a single e-Tag's History from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.7 *Callback History*

**Issued by:** ~~Authorities~~ Authority Services

**Processed by:** ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to send a single e-Tag's History from an Authority Service to an entity that requested it via QueryHistory. Primarily used for recovery purposes.

In	Message Info	Required
	History	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.8 *Query Request*

**Issued by:** ~~Agents, Approvals, RASs~~

Agent Service, Approval, RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a specific request for a single from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
Out (successful)	Return State	
	RequestProfileChange	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.9 Query Request IDs

**Issued by:** ~~Agents~~ Agent Service, Approvals, ~~RASs~~ RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a list of requests made regarding a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Status(es)	Optional
Out (successful)	Return State	
	Request ID Summary List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.10 Query Status

**Issued by:** ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a request's State from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
Out (successful)	Return State	
	Request State	
	Approver State List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.11 Query Availability

**Issued by:** ~~Agents, Approvals~~ Agent and Approval Services

**Processed by:** ~~Agents, Approvals, and Authorities,~~ Approval, and Authority Services

**Purpose:** Used to determine availability/status of an e-Tagging service. Primarily used to evaluate system performance.

In	From Entity	Required
----	-------------	----------

	To Entity	Required
Out (successful)	Return Time Stamp	
	Request Value	
Errors	0021 Invalid Registered Value	

## **Section 8 - Implementation Requirements**

### **8.1 Notifications**

#### **8.1.1 Modifications Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services that it is anticipated will have an impact on interoperability must coordinate the implementation with the NERC/NAESB subcommittee or working group responsible for the e-Tag specifications. NERC/NAESB will require structured interoperability testing for any changes impacting interoperability prior to implementation.

#### **8.1.2 Modifications Not Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services must send notification to the appropriate list server(s) 1 business day prior to implementation. In the event of a critical bug correction, this requirement is waived.

### **8.2 E-Tag System Enhancement Process**

#### **8.2.1 Change Drivers**

Changes and enhancements to the e-Tag system are generated through both industry driven efforts and by individual entities (e-Tag vendors and e-Tag system users). Industry driven changes include (1) mandated changes from NAESB business practices, NERC standards, or FERC orders; (2) enhancement requests from any e-Tag system vendor or user; (3) corrections and clarifications by NERC/NAESB or (4) modifications to reflect changes in the industry (such as the creation of the functional model).

#### **8.2.2 Creation of the Revised Specification and/or Schema**

Modifications are typically bundled into a single e-Tag revision. The JESS reviews the modification requests and integrates them into the specification and/or schema if possible. The modified specification and/or schema are then posted for comment by the industry participants and comments are addressed by the JESS. The JESS's responses are subsequently posted. This process circles until the JESS has addressed all comments and concerns. The JESS then submits the revised e-Tag specifications to the NERC IS for review and discussion. The JESS then works with the vendors to prepare final specification revisions and XSD revisions in order to take advantage of any existing infrastructure and ensure that there are no problems created by the revisions. Any comments and concerns are addressed and the final product is sent to the NAESB EC for approval.

### **8.2.3 Interoperability Testing Period**

The JESS also creates structured interoperability test scenarios, structured interoperability test registry data, and interoperability test plans. The JESS also facilitates the structured tests and resolve any disagreements in specification interpretation. The testing period consists of structured interoperability tests that involve all vendors in all service roles that they provide. These tests continue until all vendors pass the tests (or as mutually agreed). Test participants are also required to make their test systems available for other participants to utilize for development and testing. The JESS may also schedule additional testing in order to minimize risk and maximize the probability of success. Subsequent to successful completion of all tests, the industry is given one month at a minimum to deploy modified software in preparation for implementation.

### **8.2.4 Implementation**

The JESS, working with the vendors, creates an implementation schedule and plan. This plan includes all steps necessary to transition between the old version of e-Tag and new version of e-Tag. This plan is also submitted to the industry for comment and comments are acted on and responded to. Finally, JESS coordinates continent wide implementation and facilitates resolution of any problems.

## Appendix A Special Interconnection Implementation Requirements

### Introduction

This appendix contains information that the e-Tag vendors need to know in order to correctly implement the e-Tag services. The regional (RRO) details that impact interoperability or require additional functionality or validation by the Authority Service should be included in this appendix.

If these do not impact interoperability or require implementation of specific features by the Authority Service then they need not be included in this appendix. Instead these may be accessed from the NAESB web site (modify this when the URL is provided).

### WECC Interconnection

#### Introduction

WECC business standards require some additional features to the standard tagging implementation. The sections below describe the additional requirements for parties providing tagging services to WECC members. These additional requirements are mandatory for all Agent, Approval, and Authority Services used in the western interconnection, and optional for services used by other interconnections.

#### INT-BPS-009

INT-BPS-0009 applies to all tags of transaction\_type = "Capacity" that contain a sink point associated with the WECC region.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must only use energy product C-SP or C-NS.
- Any reliability entity (BA or Transmission Service Provider) may adjust the market-level energy profile. They may not change nor add transmission allocations.
- The Load-Serving-Entity listed on the tag has the same adjustment rights as the tag author or Creating Purchasing-Selling-Entity (CPSE) (can adjust energy or transmission or both).
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag's Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag

changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.

### INT-BPS-011

INT-BPS-011 applies to all tags of transaction type = “Recallable” that contain both a source and a sink point associated with the WECC region. Note that the version of INT-BPS-011 currently available from WECC references tags of transaction type = Normal. It was subsequently decided that this requirement should be implemented using a new transaction type (referred to as Recallable) instead. References to Normal in the INT-BPS-011 standard should always be interpreted as Recallable.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must use energy product C-RE.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag’s Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.

### INT-BPS-014

INT-BPS-014 applies to all tags that both the source and sink points are associated with the WECC region for transaction type = NORMAL.

The following additional tagging requirements apply to all such tags:

- The first market segment (the GPE) must contain MiscInfo with:  
Token = “WECC Reserve Responsible Entity”,  
Value = the name of the entity filling the role of “responsible entity” selected as described in the WECC business practice.
- In the case where the RE is NOT the Source BA, the following must be provided:  
The first market segment must also contain MiscInfo with  
Token = “WECC Reserve Responsible Entity Type”,  
Value = BA or PSE.  
Tags that are required to contain a reserve obligation multiplier must contain MiscInfo (in the first market segment) with

Token = “WECC\_Reserve\_Multiplier”,  
Value = 5, 7, or 100.

- Agent and Authority Services will retain a list of which PSEs are registered with WECC as valid RSG members. This list will be made available for programmatic download via webService or other standard mechanism to be provided by WECC. No validation will be done to support this business practice until the RSG member list is available for download. The list is available at:  
<http://www.wecc.biz/documents/library/ESWG/WECCBP14-PSERE.csv>
- The Business Practice contains additional implementation details.

### **Eastern Interconnection**

No Special Implementation Requirements have been identified.

### **ERCOT**

No Special Implementation Requirements have been identified.

### **Quebec Interconnection**

No Special Implementation Requirements have been identified.

XML	
version	1.0
encoding	UTF-8
xsd:schema	
xmns:xsd	http://www.w3.org/2001/XMLSchema
version	1.8.000
xsd:element	
name	AbsoluteStart
xsd:annotation	
xsd:documentation	Collection of information describing the beginning of a schedule block, specified in absolute terms (precise date-time).
xsd:complexType	
xsd:sequence	
xsd:element	ref DateTime
xsd:element	ref RampDuration
minOccurs	0
xsd:element	
name	AbsoluteStop
xsd:annotation	
xsd:documentation	Collection of information describing the end of a schedule block, specified in absolute terms (precise date-time).
xsd:complexType	
xsd:sequence	
xsd:element	ref DateTime
xsd:element	ref RampDuration
minOccurs	0
xsd:element	
name	DistributeResolution
xsd:complexType	
xsd:sequence	
xsd:element	ref MessageInfo
xsd:element	ref TagID
xsd:element	ref RequestRef
xsd:element	ref RequestStatus
xsd:element	ref CompositeState
xsd:element	ref Implement Time
minOccurs	0
xsd:element	ref TerminationTime
minOccurs	0
xsd:element	
name	DistributeResolutionResponse
xsd:annotation	
xsd:documentation	Method Response
xsd:complexType	
xsd:sequence	
xsd:element	ref DistributeResolutionReturn
xsd:element	
name	DistributeResolutionReturn
nillable	true
xsd:complexType	
xsd:sequence	
xsd:element	ref ReturnStatus
xsd:element	
name	SetState
xsd:complexType	
xsd:sequence	

		<b>xsd:element</b>	= ref	MessageInfo
		<b>xsd:element</b>	= ref	TagID
		<b>xsd:element</b>	= ref	RequestRef
		<b>xsd:element</b>	= ref	ApprovalStatus
		<b>xsd:element</b>	= ref	Notes
		<b>xsd:element</b>	= minOccurs	0
<b>xsd:element</b>				
		= name	SetStateResponse	
		<b>xsd:annotation</b>	<b>xsd:documentati...</b> Method Response	
		<b>xsd:complexType</b>		
		<b>xsd:sequence</b>		
		<b>xsd:element</b>	= ref	SetStateReturn
<b>xsd:element</b>				
		= name	SetStateReturn	
		<b>xsd:complexType</b>		
		<b>xsd:sequence</b>		
		<b>xsd:element</b>	= ref	ReturnStatus
<b>xsd:element</b>				
		= name	Entity	
		<b>xsd:annotation</b>	<b>xsd:documentati...</b> Any one of the possible parties to an e-Tag	
		<b>xsd:complexType</b>		
		<b>xsd:choice</b>		
		<b>xsd:element</b>	= ref	PSECode
		<b>xsd:element</b>	= ref	CACode
		<b>xsd:element</b>	= ref	TPCode
		<b>xsd:element</b>	= ref	SCCode
<b>xsd:element</b>				
		= name	Status	
		<b>xsd:annotation</b>	<b>xsd:documentati...</b> Collection of information describing an entity's delivery status (and optionally approval status) for a request.	
		<b>xsd:complexType</b>		
		<b>xsd:sequence</b>		
		<b>xsd:element</b>	= ref	Entity
		<b>xsd:element</b>	= ref	DeliveryStatus
		<b>xsd:element</b>	= ref	ApprovalStatus
		<b>xsd:element</b>	= ref	ApprovalStatusType
		<b>xsd:element</b>	= ref	ApprovalTimeStamp
		<b>xsd:element</b>	= minOccurs	0
		<b>xsd:element</b>	= ref	Notes
		<b>xsd:element</b>	= minOccurs	0
<b>xsd:element</b>				
		= name	StatusList	
		<b>xsd:annotation</b>	<b>xsd:documentati...</b> Collection of all approval statuses for a given request	
		<b>xsd:complexType</b>		
		<b>xsd:sequence</b>		
		<b>xsd:element</b>	= ref	Status
		<b>xsd:element</b>	= maxOccurs	unbounded

<p>▲ xsd:element</p>	<p><b>= name</b> BaseProfile</p> <p>▲ xsd:annotation</p> <p>ⓧ xsd:documentati... A collection of relative profiles, used to describe an newly requested energy schedule</p> <p>▲ xsd:complexType</p> <p>▲ xsd:sequence</p> <p>▲ xsd:element = ref ProfileID</p> <p>▲ xsd:element = ref RelativeProfileList</p>
<p>▲ xsd:element</p>	<p><b>= name</b> BaseProfileList</p> <p>▲ xsd:annotation</p> <p>ⓧ xsd:documentati... A collection of base profiles</p> <p>▲ xsd:complexType</p> <p>▲ xsd:sequence</p> <p>▲ xsd:element = ref BaseProfile</p> <p><b>= maxOccurs</b> unbounded</p>
<p>▲ xsd:element</p>	<p><b>= name</b> ContractNumber</p> <p><b>= nillable</b> true</p> <p>▲ xsd:annotation</p> <p>ⓧ xsd:documentati... Number referencing an agreement for service (i.e., energy contract, transmission reservation, etc...)</p> <p>▲ xsd:simpleType</p> <p>▲ xsd:restriction</p> <p><b>= base</b> xsd:string</p> <p>▲ xsd:maxLength</p> <p><b>= value</b> 50</p>
<p>▲ xsd:element</p>	<p><b>= name</b> CACode</p> <p><b>= type</b> TaggingEntityIDDT</p> <p>▲ xsd:annotation</p> <p>ⓧ xsd:documentati... Unique ID from the NERC Registry used to identify a Balancing Authority</p>
<p>▲ xsd:element</p>	<p><b>= name</b> Correction</p> <p>▲ xsd:annotation</p> <p>ⓧ xsd:documentati... A set of changing information that is being applied to a transaction during the approval process.</p> <p>▲ xsd:complexType</p> <p>▲ xsd:choice</p> <p>▲ xsd:element = ref PhysicalSegmentCorrection</p> <p>▲ xsd:element = ref MarketSegmentCorrection</p> <p>▲ xsd:element = ref TransmissionAllocationCorrection</p> <p>▲ xsd:element = ref LossAccountingCorrection</p>
<p>▲ xsd:element</p>	<p><b>= name</b> CorrectionID</p> <p><b>= type</b> CorrectionIDDT</p>
<p>▲ xsd:element</p>	<p><b>= name</b> RequestCorrection</p> <p>▲ xsd:complexType</p> <p>▲ xsd:sequence</p> <p>▲ xsd:element = ref MessageInfo</p> <p>▲ xsd:element = ref ContactInfo</p> <p>▲ xsd:element = ref TagID</p> <p>▲ xsd:element = ref CorrectionList</p> <p>▲ xsd:element = ref Notes</p> <p><b>= minOccurs</b> 0</p>
<p>▲ xsd:element</p>	<p><b>= name</b> RequestCorrectionResponse</p>

xsd:complexType		xsd:sequence		xsd:element		= ref	RequestCorrectionReturn
xsd:element	= name	RequestCorrectionReturn					
xsd:complexType		xsd:sequence		xsd:element		= ref	ReturnStatus
xsd:complexType		xsd:sequence		xsd:element		= ref	CorrectionID
xsd:complexType		xsd:sequence		xsd:element		= ref	TimeClassification
xsd:complexType		xsd:sequence		xsd:element		= ref	ActOnByTime
xsd:element	= name	TLRProfileChange					
xsd:annotation		xsd:documentati... Specification of a TLR's limit being set on a particular transaction					
xsd:complexType		xsd:sequence		xsd:element		= ref	TagID
xsd:complexType		xsd:sequence		xsd:element		= ref	ReliabilityLevel
xsd:element	= name	TLRProfileChangeList					
xsd:annotation		xsd:documentati... Collection of TLR profile changes					
xsd:complexType		xsd:sequence		xsd:element		= ref	TLRProfileChange
xsd:complexType		xsd:sequence		xsd:element		= maxOccurs	unbounded
xsd:element	= name	TerminationTime					
xsd:element	= type	xsd:date Time					
xsd:annotation		xsd:documentati... Termination time plus associated end ramp. This date/time is calculated by the Authority					
xsd:element	= name	Implement Time					
xsd:element	= type	xsd:date Time					
xsd:annotation		xsd:documentati... e-Tag ramp start time, time at which e-Tag transitions from CONFIRMED to IMPLEMENTED					
xsd:element	= name	ActOnByTime					
xsd:element	= type	xsd:date Time					
xsd:annotation		xsd:documentati... The time by which an approval entity must actively approve or deny a request					
xsd:element	= name	DateTime					
xsd:element	= type	xsd:date Time					
xsd:annotation		xsd:documentati... A point in time identified by both a date and time					
xsd:element	= name	DateTimeList					
xsd:annotation		xsd:documentati... A collection of DateTimes					
xsd:complexType		xsd:sequence		xsd:element		= ref	DateTime
xsd:complexType		xsd:sequence		xsd:element		= maxOccurs	unbounded
xsd:element	= name	DeliveryStatus					
xsd:element	= type	DeliveryStatusDT					
xsd:annotation							

		<b>xsd:documentati...</b> The status of a request distribution with regard to a particular party
<b>xsd:simpleType</b>		
<b>name</b>	DeliveryStatusDT	
<b>xsd:annotation</b>	<b>xsd:documentati...</b> Data type used to specify the status for a request distribution's delivery	
<b>xsd:restriction</b>		
<b>base</b>	xsd:string	
<b>xsd:enumeration</b>	<b>value</b>	QUEUED
<b>xsd:enumeration</b>	<b>value</b>	DELIVERED
<b>xsd:enumeration</b>	<b>value</b>	INVALID
<b>xsd:enumeration</b>	<b>value</b>	COMMFAIL
<b>xsd:simpleType</b>		
<b>name</b>	ApprovalStatusDT	
<b>xsd:annotation</b>	<b>xsd:documentati...</b> Data type used to specify an entity's approval/denial of a transaction request	
<b>xsd:restriction</b>		
<b>base</b>	xsd:string	
<b>xsd:enumeration</b>	<b>value</b>	NA
<b>xsd:enumeration</b>	<b>value</b>	PENDING
<b>xsd:enumeration</b>	<b>value</b>	APPROVED
<b>xsd:enumeration</b>	<b>value</b>	DENIED
<b>xsd:enumeration</b>	<b>value</b>	STUDY
<b>xsd:enumeration</b>	<b>value</b>	EXPIRED
<b>xsd:simpleType</b>		
<b>name</b>	ApprovalStatusTypeDT	
<b>xsd:annotation</b>	<b>xsd:documentati...</b> Data type used to indicate the manner in which an Approval Status was set	
<b>xsd:restriction</b>		
<b>base</b>	xsd:string	
<b>xsd:enumeration</b>	<b>value</b>	NA
<b>xsd:enumeration</b>	<b>value</b>	ACTIVE
<b>xsd:enumeration</b>	<b>value</b>	PASSIVE
<b>xsd:enumeration</b>	<b>value</b>	OVERRIDE
<b>xsd:simpleType</b>		
<b>name</b>	ReturnValueDT	
<b>xsd:annotation</b>	<b>xsd:documentati...</b> Data Type used to indicate the success or failure of a method call	
<b>xsd:restriction</b>		
<b>base</b>	xsd:string	
<b>xsd:enumeration</b>	<b>value</b>	SUCCESS
<b>xsd:enumeration</b>	<b>value</b>	FAIL
<b>xsd:enumeration</b>	<b>value</b>	DUPLICATE
<b>xsd:simpleType</b>		
<b>name</b>	RequestStatusDT	
<b>xsd:annotation</b>	<b>xsd:documentati...</b> Data Type used to indicate the disposition of a request	
<b>xsd:restriction</b>		
<b>base</b>	xsd:string	
<b>xsd:enumeration</b>	<b>value</b>	PENDING
<b>xsd:enumeration</b>		

			= value	WITHDRAWN
	▲ xsd:enumeration		= value	APPROVED
	▲ xsd:enumeration		= value	DENIED
	▲ xsd:enumeration		= value	EXPIRED
▲ xsd:simpleType	= name	CompositeStateDT		
	▲ xsd:annotation	xsd:documentati... Data Type used to indicate the overall state of an e-Tag		
	▲ xsd:restriction		= base	xsd:string
		▲ xsd:enumeration	= value	PENDING
		▲ xsd:enumeration	= value	WITHDRAWN
		▲ xsd:enumeration	= value	DENIED
		▲ xsd:enumeration	= value	EXPIRED
		▲ xsd:enumeration	= value	CONFIRMED
		▲ xsd:enumeration	= value	IMPLEMENTED
		▲ xsd:enumeration	= value	CANCELLED
		▲ xsd:enumeration	= value	TERMINATED
▲ xsd:simpleType	= name	PhoneNumberDT		
	▲ xsd:annotation	xsd:documentati... Telephone Number		
	▲ xsd:restriction		= base	xsd:string
		▲ xsd:pattern	= value	(([0-9]{3}-)?\([0-9]{3}\)[0-9]{3}-[0-9]{4}(X[0-9]{1,10})?)
▲ xsd:simpleType	= name	TransactionTypeDT		
	▲ xsd:annotation	xsd:documentati... Used to specify a type of transaction		
	▲ xsd:restriction		= base	xsd:string
		▲ xsd:enumeration	= value	NORMAL
		▲ xsd:enumeration	= value	DYNAMIC
		▲ xsd:enumeration	= value	EMERGENCY
		▲ xsd:enumeration	= value	LOSSSUPPLY
		▲ xsd:enumeration	= value	CAPACITY
		▲ xsd:enumeration	= value	RECALLABLE
		▲ xsd:enumeration	= value	PSEUDOTIE
▲ xsd:simpleType	= name	ProfileTypeDT		
	▲ xsd:annotation	xsd:documentati... Used to specify a profile type		
	▲ xsd:restriction		= base	xsd:string
		▲ xsd:enumeration	= value	MARKETLEVEL
		▲ xsd:enumeration	= value	RELIABILITYLIMIT
▲ xsd:simpleType				

	<b>name</b>	ErrorNumberRefDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Error Number ID, based on NERC registry
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	RequestIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Unique ID for a request
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	PhysicalSegmentIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Unique ID for a physical segment
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	ProfileIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Unique ID for a profile
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	MarketSegmentIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Unique ID for a market segment
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	CorrectionIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Unique ID for a correction
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	TaggingSourceSinkPointIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Tagging Point ID, based on NERC registry
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	OASISPORPODPointIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> OASIS Point ID, based on NERC registry
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	ProductIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Product ID, based on NERC registry
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	TLREventIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> TRL Event ID
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	OASISEntityIDDT
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> OASIS Entity ID, based on NERC registry
	<b>xsd:restriction</b>	<b>base</b> xsd:integer
<b>xsd:simpleType</b>	<b>name</b>	TaggingEntityIDDT
	<b>xsd:annotation</b>	

	<b>xsd:documentation</b>	Tagging Entity ID, based on NERC registry
	<b>xsd:restriction</b>	
	<b>base</b>	xsd:integer
<b>xsd:element</b>	<b>name</b>	Load
	<b>xsd:annotation</b>	<b>xsd:documentation</b> Information defining the consumption point of the energy from a transaction
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	<b>ref</b> ResourceList
<b>xsd:element</b>	<b>name</b>	DistributeProfileChange
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	<b>ref</b> MessageInfo
	<b>xsd:element</b>	<b>ref</b> TagID
	<b>xsd:element</b>	<b>ref</b> ApprovalRights
	<b>xsd:element</b>	<b>ref</b> RequestID
	<b>xsd:element</b>	<b>ref</b> Requestor
	<b>xsd:element</b>	<b>ref</b> ExceptionProfileChangeList <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> TransmissionAllocationChangeList <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> LossAccountingChangeList <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> ContactInfo <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> Notes <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> MiscInfoList <b>minOccurs</b> 0
	<b>xsd:element</b>	<b>ref</b> RequestTimeStamp
	<b>xsd:element</b>	<b>ref</b> TimeClassification
	<b>xsd:element</b>	<b>ref</b> ActOnByTime
<b>xsd:element</b>	<b>name</b>	DistributeProfileChange Response
	<b>xsd:annotation</b>	<b>xsd:documentation</b> Method Response
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	<b>ref</b> DistributeProfileChangeReturn
<b>xsd:element</b>	<b>name</b>	DistributeProfileChange Return
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	<b>ref</b> ReturnStatus
<b>xsd:element</b>	<b>name</b>	DistributeCorrection
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	

					= ref	MessageInfo
	▲ xsd:element				= ref	ContactInfo
					= minOccurs	0
	▲ xsd:element				= ref	TagID
	▲ xsd:element				= ref	CorrectionID
	▲ xsd:element				= ref	Requestor
	▲ xsd:element				= ref	CorrectionList
	▲ xsd:element				= ref	Impact
	▲ xsd:element				= ref	RequestTimeStamp
	▲ xsd:element				= ref	TimeClassification
	▲ xsd:element				= ref	ActOnByTime
					= ref	Notes
					= minOccurs	0
▲ xsd:element		= name	DistributeCorrectionResponse			
	▲ xsd:annotation		⚠ xsd:documentati... Method Response			
	▲ xsd:complexType			▲ xsd:sequence		
				▲ xsd:element	= ref	DistributeCorrectionReturn
▲ xsd:element		= name	DistributeCorrectionReturn			
	▲ xsd:complexType			▲ xsd:sequence		
				▲ xsd:element	= ref	ReturnStatus
▲ xsd:element		= name	DistributePotentialTLRProfileChange			
	▲ xsd:complexType			▲ xsd:sequence		
				▲ xsd:element	= ref	MessageInfo
				▲ xsd:element	= ref	StartDateTime
				▲ xsd:element	= ref	TLREventRef
				▲ xsd:element	= ref	MiscInfoList
				▲ xsd:element	= ref	TLRProfileChangeList
▲ xsd:element		= name	DistributePotentialTLRProfileChange Return			
	▲ xsd:complexType			▲ xsd:sequence		
				▲ xsd:element	= ref	ReturnStatus
▲ xsd:element		= name	DistributeNewTag			
	▲ xsd:complexType			▲ xsd:sequence		
				▲ xsd:element	= ref	MessageInfo
				▲ xsd:element	= ref	Tag
				▲ xsd:element	= ref	ApprovalRights
				▲ xsd:element	= ref	RequestTimeStamp

			<b>xsd:element</b>	= ref	TimeClassification	
			<b>xsd:element</b>	= ref	ActOnByTime	
▲ <b>xsd:element</b>	<b>= name</b>	DistributeNewTagResponse				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> Method Response				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	DistributeNewTagReturn	
▲ <b>xsd:element</b>	<b>= name</b>	DistributeNewTagReturn				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	ReturnStatus	
▲ <b>xsd:element</b>	<b>= name</b>	ErrorList				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> Collection of errors				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	Error	
				= maxOccurs	unbounded	
▲ <b>xsd:element</b>	<b>= name</b>	ErrorMessage				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> A situation-specific error describing in detail the reason an error was assigned to a transaction				
	▲ <b>xsd:simpleType</b>		▲ <b>xsd:restriction</b>	= base	xsd:string	
				▲ <b>xsd:maxLength</b>	= value	128
▲ <b>xsd:element</b>	<b>= name</b>	ExceptionProfile				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> A profile that indicates a variance from the base profile				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	ProfileRef	
			▲ <b>xsd:element</b>	= ref	AbsoluteProfileList	
▲ <b>xsd:element</b>	<b>= name</b>	ExceptionProfileList				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> A collection of exception profiles				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	ExceptionProfile	
				= maxOccurs	unbounded	
▲ <b>xsd:element</b>	<b>= name</b>	ExceptionProfileSet				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> The collection of all exception profiles and the request IDS associated with them				
	▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>			
			▲ <b>xsd:element</b>	= ref	ExceptionProfileList	
▲ <b>xsd:element</b>	<b>= name</b>	Fax				
	<b>= type</b>	PhoneNumberDT				
	▲ <b>xsd:annotation</b>	<b>xsd:documentation</b> Fax number				
▲ <b>xsd:element</b>						

<b>name</b> FromEntity	
<b>xsd:annotation</b> <b>xsd:documentation</b> Container for the ID of an entity sending a message	
<b>xsd:complexType</b>	
<b>xsd:choice</b>	
<b>xsd:element</b>	<b>ref</b> PSECode
<b>xsd:element</b>	<b>ref</b> CACode
<b>xsd:element</b>	<b>ref</b> TPCode
<b>xsd:element</b>	<b>ref</b> SCCode
<b>xsd:element</b>	
<b>name</b> Generation	
<b>xsd:annotation</b> <b>xsd:documentation</b> Region or plant form which generation is being procured	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> ResourceList
<b>xsd:element</b>	
<b>name</b> QueryHistory	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> MessageInfo
<b>xsd:element</b>	<b>ref</b> TagID
<b>xsd:element</b>	<b>ref</b> CallbackTarget <b>minOccurs</b> 0
<b>xsd:element</b>	
<b>name</b> QueryHistoryResponse	
<b>xsd:annotation</b> <b>xsd:documentation</b> Method Response	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> QueryHistoryReturn
<b>xsd:element</b>	
<b>name</b> QueryHistoryReturn	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> ReturnStatus
<b>xsd:element</b>	
<b>name</b> QueryRequest	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> MessageInfo
<b>xsd:element</b>	<b>ref</b> TagID
<b>xsd:element</b>	<b>ref</b> RequestRef
<b>xsd:element</b>	
<b>name</b> QueryRequestResponse	
<b>xsd:annotation</b> <b>xsd:documentation</b> Method Response	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> QueryRequestReturn
<b>xsd:element</b>	
<b>name</b> QueryRequestReturn	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	

					= ref	ReturnStatus
			<ul style="list-style-type: none"> <li>xsd:choice                     <ul style="list-style-type: none"> <li>minOccurs: 0</li> <li>xsd:element                             <ul style="list-style-type: none"> <li>= ref</li> <li>DistributeProfileChan...</li> </ul> </li> <li>xsd:element                             <ul style="list-style-type: none"> <li>= ref</li> <li>DistributeTerminateTag</li> </ul> </li> </ul> </li> </ul>			
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryStatus</li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>MessageInfo</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>TagID</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>RequestRef</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>						
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryStatusResponse</li> <li>xsd:annotation                             <ul style="list-style-type: none"> <li>xsd:documentation: Method Response</li> </ul> </li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>QueryStatusReturn</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>						
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryStatusReturn</li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>ReturnStatus</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>RequestStatus</li> <li>minOccurs: 0</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>StatusList</li> <li>minOccurs: 0</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>						
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryTag</li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>MessageInfo</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>TagID</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>						
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryTagResponse</li> <li>xsd:annotation                             <ul style="list-style-type: none"> <li>xsd:documentation: Method Response</li> </ul> </li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>QueryTagReturn</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>						
<ul style="list-style-type: none"> <li>xsd:element                     <ul style="list-style-type: none"> <li>name: QueryTagReturn</li> <li>xsd:complexType                             <ul style="list-style-type: none"> <li>xsd:sequence                                     <ul style="list-style-type: none"> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>ReturnStatus</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>Tag</li> <li>minOccurs: 0</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>ApprovalRights</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>RequestTimeStamps</li> </ul> </li> <li>xsd:element   <ul style="list-style-type: none"> <li>= ref</li> <li>TimeClassification</li> </ul> </li> <li>xsd:element</li> </ul> </li> </ul> </li> </ul> </li> </ul>						

					= ref	ActOnByTime
	▲ xsd:element				= ref	ImplementTime
					= minOccurs	0
	▲ xsd:element				= ref	TerminationTime
					= minOccurs	0
▲ xsd:element		= name	History			
	▲ xsd:annotation			ⓧ xsd:documentati...	Collection of information describing the transactional history associated with a particular tag	
	▲ xsd:complexType					
		▲ xsd:sequence		▲ xsd:element	= ref	Action
					= maxOccurs	unbounded
▲ xsd:element		= name	MarketSegment			
	▲ xsd:annotation			ⓧ xsd:documentati...	A collection of information describing the role of a market participant with regard to portions of a transaction	
	▲ xsd:complexType					
		▲ xsd:sequence		▲ xsd:element	= ref	MarketSegmentID
				▲ xsd:element	= ref	PSECode
				▲ xsd:element	= ref	EnergyProductRef
					= minOccurs	0
				▲ xsd:element	= ref	ContractNumberList
					= minOccurs	0
				▲ xsd:element	= ref	MiscInfoList
					= minOccurs	0
				▲ xsd:element	= ref	ContactInfo
					= minOccurs	0
▲ xsd:element		= name	MarketSegmentID			
		= type	MarketSegmentIDDT			
	▲ xsd:annotation			ⓧ xsd:documentati...	Unique identifier for a market Segment. Should be representative of the order of the market segments, with the first segment being labeled "1" and the last being labeled with the total number of segments. For example, For three market segments, the GPE would be a "1," the intermediate PSE would be "2," and the LSE would be "3."	
▲ xsd:element		= name	CCList			
	▲ xsd:annotation			ⓧ xsd:documentati...	A Collection of Entities to be provided with copies of e-Tag	
	▲ xsd:complexType					
		▲ xsd:sequence		▲ xsd:element	= ref	Entity
					= maxOccurs	5
▲ xsd:element		= name	MarketSegmentList			
	▲ xsd:annotation			ⓧ xsd:documentati...	A Collection of Market Segments	
	▲ xsd:complexType					
		▲ xsd:sequence		▲ xsd:element	= ref	MarketSegment
					= maxOccurs	unbounded
▲ xsd:element		= name	MessageInfo			
	▲ xsd:annotation			ⓧ xsd:documentati...	A collection of information describing the communication aspects of a method call	

xsd:complexType		xsd:sequence		xsd:element	= ref	FromEntity
				xsd:element	= ref	SecurityKey
				xsd:element	= ref	ToEntity
				xsd:element	= ref	CallTimeStamp
xsd:element	= name	MiscInfo				
	xsd:annotation	xsd:documentation... Generic container of information				
xsd:complexType		xsd:sequence		xsd:element	= ref	Token
				xsd:element	= ref	Value
xsd:element	= name	MiscInfoList				
	xsd:annotation	xsd:documentation... Collection of MiscInfo items				
xsd:complexType		xsd:sequence		xsd:element	= ref	MiscInfo
				= maxOccurs	unbounded	
xsd:element	= name	Notes				
	= nillable	true				
	xsd:annotation	xsd:documentation... Generic holder of note information				
xsd:simpleType		xsd:restriction		= base	xsd:string	
				xsd:maxLength	= value	128
xsd:element	= name	Distribute Status				
xsd:complexType		xsd:sequence		xsd:element	= ref	MessageInfo
				xsd:element	= ref	TagID
				xsd:element	= ref	RequestRef
				xsd:element	= ref	StatusList
xsd:element	= name	Distribute StatusResponse				
	xsd:annotation	xsd:documentation... Method Response				
xsd:complexType		xsd:sequence		xsd:element	= ref	DistributeStatusReturn
xsd:element	= name	Distribute StatusReturn				
xsd:complexType		xsd:sequence		xsd:element	= ref	ReturnStatus
xsd:element	= name	Distribute TerminateTag				
xsd:complexType		xsd:sequence				

	<b>xsd:element</b>	= ref	MessageInfo
	<b>xsd:element</b>	= ref	TagID
	<b>xsd:element</b>	= ref	ApprovalRights
	<b>xsd:element</b>	= ref	RequestRef
	<b>xsd:element</b>	= ref	Requestor
	<b>xsd:element</b>	= ref	AbsoluteStart
	<b>xsd:element</b>	= ref	TimeClassification
	<b>xsd:element</b>	= ref	RequestTimeStamps
	<b>xsd:element</b>	= ref	ActOnByTime
	<b>xsd:element</b>	= ref	ContactInfo
	<b>xsd:element</b>	= minOccurs	0
	<b>xsd:element</b>	= ref	Notes
	<b>xsd:element</b>	= minOccurs	0
<b>xsd:element</b>	<b>name</b>	Distribute Terminate Tag Response	
	<b>xsd:annotation</b>	xsd:documentation Method Response	
	<b>xsd:complexType</b>	<b>xsd:sequence</b>	
	<b>xsd:element</b>	= ref	Distribute Terminate Tag Return
<b>xsd:element</b>	<b>name</b>	Distribute Terminate Tag Return	
	<b>xsd:complexType</b>	<b>xsd:sequence</b>	
	<b>xsd:element</b>	= ref	ReturnStatus
<b>xsd:element</b>	<b>name</b>	Parent Segment Ref	
	<b>type</b>	PhysicalSegmentIDDT	
	<b>xsd:annotation</b>	xsd:documentation Reference to a transmission allocation's parent physical segment	
<b>xsd:element</b>	<b>name</b>	Phone	
	<b>type</b>	PhoneNumberDT	
	<b>xsd:annotation</b>	xsd:documentation Phone number	
<b>xsd:element</b>	<b>name</b>	PhysicalSegmentRef	
	<b>type</b>	PhysicalSegmentIDDT	
	<b>xsd:annotation</b>	xsd:documentation Reference to a physical segment	
<b>xsd:element</b>	<b>name</b>	PhysicalSegmentID	
	<b>type</b>	PhysicalSegmentIDDT	
	<b>xsd:annotation</b>	xsd:documentation Unique identifier for a physical segment. Should be representative of the order of the physical segments, with the first segment being labeled "1" and the last being labeled with the total number of segments. . For example, for four physical segments, the Generation would be a "1," the first leg of transmission would be "2," the second leg of transmission would be "3," and the Load would be "4."	
<b>xsd:element</b>	<b>name</b>	POD	
	<b>type</b>	OASISPORPODPointIDDT	
	<b>xsd:annotation</b>	xsd:documentation Point of Delivery	
<b>xsd:element</b>	<b>name</b>	PODProfile	

<b>xsd:annotation</b> (xsd:documentati... profile associated with a POD	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	
= ref	ProfileRef
<b>xsd:element</b>	
= name	POR
= type	OASISPORPODPointIDDT
<b>xsd:annotation</b> (xsd:documentati... Point of Receipt	
<b>xsd:element</b>	
= name	PORProfile
<b>xsd:annotation</b> (xsd:documentati... Profile associated with a POR	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	
= ref	ProfileRef
<b>xsd:element</b>	
= name	TransProductRef
= type	ProductIDDT
<b>xsd:annotation</b> (xsd:documentati... Reference to a NERC registered transmission product	
<b>xsd:element</b>	
= name	PSECode
= type	TaggingEntityIDDT
<b>xsd:annotation</b> (xsd:documentati... Unique ID for a PSE, as specified in the NERC registry	
<b>xsd:element</b>	
= name	RampDuration
= type	xsd:integer
<b>xsd:annotation</b> (xsd:documentati... Amount of time, in minutes, over which a generator's output is increased or decreased	
<b>xsd:element</b>	
= name	ReturnValue
= type	ReturnValueDT
<b>xsd:annotation</b> (xsd:documentati... Value used to indicate the results of a method call	
<b>xsd:element</b>	
= name	TimeClassification
<b>xsd:annotation</b> (xsd:documentati... Enumerated Value indicating whether the e-Tag was classified as ontime, late, or ATF by the Authority based on CallTimeStamp	
<b>xsd:simpleType</b>	
<b>xsd:restriction</b>	
= base	xsd:string
<b>xsd:enumeration</b>	
= value	OnTime
<b>xsd:enumeration</b>	
= value	Late
<b>xsd:enumeration</b>	
= value	ATF
<b>xsd:element</b>	
= name	RelativeBlock
<b>xsd:annotation</b> (xsd:documentati... A collection of information describing an energy flow in relative terms (a static date/time combined with an offset from that date/time).	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	
= ref	RelativeStart
<b>xsd:element</b>	
= ref	MWLevel
<b>xsd:element</b>	
= ref	RelativeStop
<b>xsd:element</b>	
= name	RelativeBlockList
<b>xsd:annotation</b>	

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  |                     |  |                    |   |  |   |                                   |   |  |      
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--|--------------------|---|------------|-------------|--------------------|---|------------|-------|--------------------|--|------------|----------------|------------------|---|--|--|--------------------|--|--|--|
|  |   | <b>xsd:documentati...</b>   | A collection of relative blocks   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
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  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <table border="1"> <tr> <td> <table border="1"> <tr> <td><b>xsd:complexType</b></td> <td> <table border="1"> <tr> <td><b>xsd:sequence</b></td> <td> <table border="1"> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>RelativeBlock</td> </tr> <tr> <td><b>maxOccurs</b></td> <td>unbounded</td> </tr> </table> </td> </tr> </table> </td> </tr> </table> </td> </tr> </table> </td> <td></td> <td></td> </tr> <tr> <td colspan="2"><b>xsd:element</b></td> <td><b>name</b></td> <td>RelativeProfile</td> </tr> <tr> <td colspan="2"> <table border="1"> <tr> <td><b>xsd:annotation</b></td> <td> <table border="1"> <tr> <td><b>xsd:documentati...</b></td> <td>A Profile described in relative terms, using relative blocks</td> </tr> </table> </td> </tr> <tr> <td> <table border="1"> <tr> <td><b>xsd:complexType</b></td> <td> <table border="1"> <tr> <td><b>xsd:sequence</b></td> <td> <table border="1"> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> 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</tr> <tr> <td><b>minOccurs</b></td> <td>0</td> </tr> </table> </td> </tr> </table> </td> </tr> </table> </td> <td></td> <td></td> </tr> </table> </td> <td></td> <td></td> </tr> <tr> <td colspan="2"><b>xsd:element</b></td> <td><b>name</b></td> <td>RelativeStop</td> </tr> <tr> <td colspan="2"> <table border="1"> <tr> <td><b>xsd:annotation</b></td> <td> <table border="1"> <tr> <td><b>xsd:documentati...</b></td> <td>Collection of information describing the end of an energy block, specified in relative terms (offset from a reference date-time).</td> </tr> </table> </td> </tr> <tr> <td> <table border="1"> <tr> <td><b>xsd:complexType</b></td> <td> <table border="1"> <tr> <td><b>xsd:sequence</b></td> <td> <table border="1"> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>TimeOffset</td> </tr> </table> </td> </tr> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>RampDuration</td> </tr> <tr> <td><b>minOccurs</b></td> <td>0</td> </tr> </table> </td> </tr> </table> </td> </tr> </table> </td> <td></td> <td></td> </tr> </table> </td> <td></td> <td></td> </tr> <tr> <td colspan="2"><b>xsd:element</b></td> <td><b>name</b></td> <td>ReliabilityLevel</td> </tr> <tr> <td colspan="2"> <table border="1"> <tr> <td><b>type</b></td> <td>xsd:integer</td> </tr> <tr> <td><b>nillable</b></td> <td>true</td> </tr> <tr> <td><b>xsd:annotation</b></td> <td> <table border="1"> <tr> <td><b>xsd:documentati...</b></td> <td>Level used to specify limits on transactions when identified for curtailment</td> </tr> </table> </td> </tr> </table> </td> <td></td> <td></td> </tr> <tr> <td colspan="2"><b>xsd:element</b></td> <td><b>name</b></td> <td>QuerySummaries</td> </tr> <tr> <td colspan="2"> <table border="1"> <tr> <td><b>xsd:complexType</b></td> <td> <table border="1"> <tr> <td><b>xsd:sequence</b></td> <td> <table border="1"> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>MessageInfo</td> 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| <b>xsd:element</b>   |   | <b>name</b>   | ReliabilityLevel  |  |  |   |   |   |  |  |   
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| <b>xsd:element</b>   |   | <b>name</b>   | QuerySummaries  |  |  |   |   |   |  |  |   
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| <b>xsd:sequence</b>  | <table border="1"> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>MessageInfo</td> </tr> </table> </td> </tr> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>Range</td> </tr> </table> </td> </tr> <tr> <td><b>xsd:element</b></td> <td> <table border="1"> <tr> <td><b>ref</b></td> <td>CallbackTarget</td> </tr> <tr> <td><b>minOccurs</b></td> <td>0</td> </tr> </table> </td> </tr> </table>  | <b>xsd:element</b>  | <table border="1"> <tr> <td><b>ref</b></td> <td>MessageInfo</td> </tr> </table>   | <b>ref</b>   | MessageInfo  | <b>xsd:element</b>  | <table border="1"> <tr> <td><b>ref</b></td> <td>Range</td> </tr> </table>   | <b>ref</b>  | Range  | <b>xsd:element</b>   | <table border="1"> <tr> <td><b>ref</b></td> <td>CallbackTarget</td> </tr> <tr> <td><b>minOccurs</b></td> <td>0</td> </tr> </table>
| <b>ref</b>  | CallbackTarget   | <b>minOccurs</b>  | 0  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
  |                     |  |                    |   |  |   |                                   |   |  |      
  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>xsd:element</b>   | <table border="1"> <tr> <td><b>ref</b></td> <td>MessageInfo</td> </tr> </table>   | <b>ref</b>  | MessageInfo   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
  |                     |  |                    |   |  |   |                                   |   |  |      
  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>ref</b>   | MessageInfo   |   |   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
  |                     |  |                    |   |  |   |                                   |   |  |      
  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>xsd:element</b>   | <table border="1"> <tr> <td><b>ref</b></td> <td>Range</td> </tr> </table>   | <b>ref</b>  | Range   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
  |                     |  |                    |   |  |   |                                   |   |  |      
  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>ref</b>   | Range   |   |   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
  |                     |  |                    |   |  |   |                                   |   |  |      
  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>xsd:element</b>   | <table border="1"> <tr> <td><b>ref</b></td> <td>CallbackTarget</td> </tr> <tr> <td><b>minOccurs</b></td> <td>0</td> </tr> </table>  | <b>ref</b>  | CallbackTarget  | <b>minOccurs</b>   | 0  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
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  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>ref</b>   | CallbackTarget  |   |   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
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  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
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  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>minOccurs</b>   | 0   |   |   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
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   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |
| <b>xsd:element</b>   |   |   |   |  |  |   |   |   |  |  |   
|   |  |   |  |  |                |                   |   |   |                       |   |                           |  |   |                        |   |  |   
   |   |  |  |  |   |  |   |  |  |   |                     |   |                    |   |                    |  |                    |                        |  
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  |  |  |   |  |                        |  |   |   |  |  |                    |  |                    |  |                  |  |   |                        |   |  |  |   |  |                        |  |                     |   
   |                    |  |  |  |   |  |  |  |                     |   |                    |  |                |  |                    |  |   |                     |   |                    |   |  |                           |   |  |                        |  |                     |   |                    |  |                  |                 |                    |  |   |                           |  |   |  |                    |  |             |                    |   
  |             |                        |   |                     |  |                    |   |            |                       |   |   |  |       |                    |  |            |                |                  |  |  |                        |   |                     |  |                    |   |            |             |                    |   |            |       |                    |  |            |                |                  |   |  |  |                    |  |  |  |

<b>name</b> QuerySummariesReturn	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> ReturnStatus
<b>xsd:element</b>	
<b>name</b> QuerySummariesResponse	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> Method Response	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> QuerySummariesReturn
<b>xsd:element</b>	
<b>name</b> Resource	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> General container for a generation or load	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> TaggingPointID
<b>xsd:element</b>	<b>ref</b> ProfileRef
<b>xsd:element</b>	<b>ref</b> ContractNumberList <b>minOccurs</b> 0
<b>xsd:element</b>	<b>ref</b> MiscInfoList <b>minOccurs</b> 0
<b>xsd:element</b>	<b>ref</b> ContactInfo <b>minOccurs</b> 0
<b>xsd:element</b>	
<b>name</b> ResourceList	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> Collection of resources. At this point in time, is limited to only one resource.	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> Resource
<b>xsd:element</b>	
<b>name</b> RequestID	
<b>type</b> RequestIDDT	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> unique ID associated with a specific transaction	
<b>xsd:element</b>	
<b>name</b> ProfileID	
<b>type</b> ProfileIDDT	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> Unique identifier for a profile	
<b>xsd:element</b>	
<b>name</b> ProfileRef	
<b>type</b> ProfileIDDT	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> Reference to a profile	
<b>xsd:element</b>	
<b>name</b> ProfileSet	
<b>xsd:annotation</b>	
<b>xsd:documentation</b> Collection of profiles; both base and exception	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> BaseProfileList
<b>xsd:element</b>	<b>ref</b> ExceptionProfileSet <b>minOccurs</b> 0
<b>xsd:element</b>	
<b>name</b> SchedulingEntity	

xsd:annotation		xsd:documentation	Entity that is responsible for operationally scheduling flows resultant form the scheduling of a transmission reservation.
xsd:complexType		xsd:choice	
	xsd:element	= ref	CACode
xsd:element	= name	SchedulingEntityList	
xsd:annotation		xsd:documentation	A collection of scheduling entities. Should be in scheduling path order.
xsd:complexType		xsd:sequence	
	xsd:element	= ref	SchedulingEntity
	= maxOccurs	unbounded	
xsd:element	= name	SecurityKey	
xsd:annotation		xsd:documentation	Unique key sued for access control to a transaction
xsd:simpleType		xsd:restriction	
	= base	xsd:string	
	xsd:maxLength	= value	12
	xsd:minLength	= value	12
	xsd:pattern	= value	[0-9a-zA-Z]{12}
xsd:element	= name	PhysicalSegment	
xsd:annotation		xsd:documentation	collection of data describing a physical portion of the transaction path
xsd:complexType		xsd:sequence	
	xsd:element	= ref	PhysicalSegmentID
	xsd:element	= ref	ParentMarketSegmentRef
	xsd:choice		
	xsd:element	= ref	Generation
	xsd:element	= ref	Load
	xsd:element	= ref	Transmission
xsd:element	= name	PhysicalSegmentList	
xsd:annotation		xsd:documentation	Collection of physical segments
xsd:complexType		xsd:sequence	
	xsd:element	= ref	PhysicalSegment
	= maxOccurs	unbounded	
xsd:element	= name	TaggingPointID	
	= type	TaggingSourceSinkPointIDDT	
xsd:annotation		xsd:documentation	Generation or Load point
xsd:element	= name	ApprovalStatus	
	= type	ApprovalStatusDT	
xsd:annotation		xsd:documentation	Used to indicate an Approval Entity's decision to support or not support implementation of a request
xsd:element	= name	ApprovalStatusType	
	= type	ApprovalStatusTypeDT	

<b>xsd:annotation</b> <b>xsd:documentation</b> Specifies whether an approval state was set via active or passive means	
<b>xsd:element</b> <b>name</b> RequestNewTagResponse <b>xsd:annotation</b> <b>xsd:documentation</b> Method Response <b>xsd:complexType</b> <b>xsd:sequence</b> <b>xsd:element</b> <b>ref</b> RequestNewTagReturn	
<b>xsd:element</b> <b>name</b> RequestNewTagReturn <b>xsd:complexType</b> <b>xsd:sequence</b> <b>xsd:element</b> <b>ref</b> ReturnStatus <b>xsd:element</b> <b>ref</b> RequestID <b>minOccurs</b> 0 <b>xsd:element</b> <b>ref</b> TimeClassification <b>xsd:element</b> <b>ref</b> ActOnByTime	
<b>xsd:element</b> <b>name</b> RequestNewTag <b>xsd:complexType</b> <b>xsd:sequence</b> <b>xsd:element</b> <b>ref</b> MessageInfo <b>xsd:element</b> <b>ref</b> Tag	
<b>xsd:element</b> <b>name</b> TagSummary <b>xsd:annotation</b> <b>xsd:documentation</b> Brief overview of Tag transaction al data and credentials <b>xsd:complexType</b> <b>xsd:sequence</b> <b>xsd:element</b> <b>ref</b> TagID <b>xsd:element</b> <b>ref</b> SecurityKey <b>xsd:element</b> <b>ref</b> CorrectionID <b>xsd:element</b> <b>ref</b> CurrentRequestCount	
<b>xsd:element</b> <b>name</b> TagData <b>xsd:annotation</b> <b>xsd:documentation</b> Basic transaction information, describes the transaction as a physical schedule supported by transmission <b>xsd:complexType</b> <b>xsd:sequence</b> <b>xsd:element</b> <b>ref</b> MarketSegmentList <b>xsd:element</b> <b>ref</b> PhysicalSegmentList <b>xsd:element</b> <b>ref</b> CCLList <b>minOccurs</b> 0 <b>xsd:element</b> <b>ref</b> ProfileSet <b>xsd:element</b> <b>ref</b> TransmissionAllocationList <b>xsd:element</b> <b>ref</b> LossAccountingList <b>minOccurs</b> 0	
<b>xsd:element</b> <b>name</b> TagID <b>xsd:annotation</b>	

	<b>xsd:documentati...</b>	Collection of information that uniquely identifies a tag
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	= ref GCACode
	<b>xsd:element</b>	= ref PSECode
	<b>xsd:element</b>	= ref TagCode
	<b>xsd:element</b>	= ref LCACode
<b>xsd:element</b>	= name	TagSummaryList
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Collection of tag summaries
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	= ref TagSummary
		= maxOccurs unbounded
<b>xsd:element</b>	= name	TimeOffset
	= type	xsd:duration
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Duration to be combined with a static date/time to generate a specific point in time.
<b>xsd:element</b>	= name	CallTimeStamp
	= type	xsd:date Time
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Time at which a method call was made, according to the caller.
<b>xsd:element</b>	= name	ToEntity
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Entity to which a message is being sent
	<b>xsd:complexType</b>	
	<b>xsd:choice</b>	
	<b>xsd:element</b>	= ref PSECode
	<b>xsd:element</b>	= ref CACode
	<b>xsd:element</b>	= ref TPCode
	<b>xsd:element</b>	= ref SCCode
<b>xsd:element</b>	= name	Token
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> generic label to describe miscellaneous data
	<b>xsd:simpleType</b>	
	<b>xsd:restriction</b>	
	= base	xsd:string
	<b>xsd:maxLength</b>	= value 128
	<b>xsd:minLength</b>	= value 1
<b>xsd:element</b>	= name	TransmissionProfile
	<b>xsd:annotation</b>	<b>xsd:documentati...</b> Collection of information describing a transmission providers import (POR) and export (POD) profiles
	<b>xsd:complexType</b>	
	<b>xsd:sequence</b>	
	<b>xsd:element</b>	= ref PORProfile
	<b>xsd:element</b>	= ref PODProfile
<b>xsd:element</b>	= name	TransmissionAllocation
	<b>xsd:annotation</b>	

		<b>xsd:documentation</b> ... Collection of information describing the manner in which a transmission reservation is being used to supply a transaction with transmission resources
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref TransmissionAllocationID
		<b>xsd:element</b> = ref ParentSegmentRef
		<b>xsd:element</b> = ref TransProductRef
		<b>xsd:element</b> = ref ContractNumber
		<b>xsd:element</b> = ref TransmissionCustomerCode
		<b>xsd:element</b> = ref AllocationBaseProfile
		<b>xsd:element</b> = ref AllocationExceptionProfile
		<b>minOccurs</b> 0
<b>xsd:element</b>		<b>name</b> TransmissionAllocationList
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... Collection of transmission allocations
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref TransmissionAllocation
		<b>maxOccurs</b> unbounded
<b>xsd:element</b>		<b>name</b> TransmissionCustomerCode
		<b>type</b> OASISEntityIDDT
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... Unique ID per the NERC Registry specifying a transmission customer
<b>xsd:element</b>		<b>name</b> TransmissionProfileList
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... Collection of transmission profiles
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref TransmissionProfile
<b>xsd:element</b>		<b>name</b> TPCode
		<b>type</b> TaggingEntityIDDT
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... Unique ID per the NERC registry that represents a particular transmission Provider
<b>xsd:element</b>		<b>name</b> Value
		<b>nillable</b> true
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... generic container for miscellaneous data
<b>xsd:simpleType</b>		<b>xsd:restriction</b>
		<b>base</b> xsd:string
		<b>xsd:maxLength</b>
		<b>value</b> 128
<b>xsd:element</b>		<b>name</b> Transmission
		<b>xsd:annotation</b>
		<b>xsd:documentation</b> ... Collection of information describing a transmission provider's physical role in a transaction
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref TPCode
		<b>xsd:element</b> = ref POR
		<b>xsd:element</b> = ref POD
		<b>xsd:element</b>

					= ref	TransmissionProfileList
▲ xsd:element				▲ xsd:element	= ref	SchedulingEntityList
					= minOccurs	0
				▲ xsd:element	= ref	MiscInfoList
					= minOccurs	0
▲ xsd:element	= name	DistributePotentialTLRProfileChangeResponse				
	▲ xsd:annotation		ⓧ xsd:documentati...	Method Response		
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	DistributePotentialTLRProfileChangeReturn
▲ xsd:element	= name	ContractNumberList				
	▲ xsd:annotation		ⓧ xsd:documentati...	Collection of Contract Numbers		
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	ContractNumber
					= maxOccurs	unbounded
▲ xsd:element	= name	WithdrawRequest				
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	MessageInfo
				▲ xsd:element	= ref	ContactInfo
					= minOccurs	0
				▲ xsd:element	= ref	TagID
				▲ xsd:element	= ref	RequestRef
				▲ xsd:element	= ref	Notes
					= minOccurs	0
▲ xsd:element	= name	WithdrawRequestResponse				
	▲ xsd:annotation		ⓧ xsd:documentati...	Method Response		
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	WithdrawRequestReturn
▲ xsd:element	= name	WithdrawRequestReturn				
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	ReturnStatus
▲ xsd:element	= name	RequestTerminateTag				
	▲ xsd:annotation		ⓧ xsd:documentati...	Method Call to Terminate an IMPLEMENTED transaction		
	▲ xsd:complexType					
			▲ xsd:sequence			
				▲ xsd:element	= ref	MessageInfo
				▲ xsd:element	= ref	ContactInfo
					= minOccurs	0
				▲ xsd:element	= ref	TagID
				▲ xsd:element	= ref	AbsoluteStart

xsd:element		= ref	Notes																				
		= minOccurs	0																				
▲ xsd:element	= name	RequestTerminateTagResponse																					
	▲ xsd:annotation	xsd:documentation Method Response																					
	▲ xsd:complexType	▲ xsd:sequence <table border="1"> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">RequestTerminateTagReturn</td> </tr> </table>		▲ xsd:element	= ref	RequestTerminateTagReturn																	
▲ xsd:element	= ref	RequestTerminateTagReturn																					
▲ xsd:element	= name	RequestTerminateTagReturn																					
	▲ xsd:complexType	▲ xsd:sequence <table border="1"> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">ReturnStatus</td> </tr> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">RequestID</td> </tr> <tr> <td></td> <td>= minOccurs</td> <td colspan="2">0</td> </tr> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">TimeClassification</td> </tr> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">ActOnByTime</td> </tr> </table>		▲ xsd:element	= ref	ReturnStatus		▲ xsd:element	= ref	RequestID			= minOccurs	0		▲ xsd:element	= ref	TimeClassification		▲ xsd:element	= ref	ActOnByTime	
▲ xsd:element	= ref	ReturnStatus																					
▲ xsd:element	= ref	RequestID																					
	= minOccurs	0																					
▲ xsd:element	= ref	TimeClassification																					
▲ xsd:element	= ref	ActOnByTime																					
▲ xsd:element	= name	ApprovalRights																					
	= type	xsd:boolean																					
	▲ xsd:annotation	xsd:documentation Flag used to indicate whether or not an entity is expected to take approval action upon a request or not																					
▲ xsd:element	= name	Error																					
	▲ xsd:annotation	xsd:documentation Collection of information describing an error																					
	▲ xsd:complexType	▲ xsd:sequence <table border="1"> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">ErrorNumberRef</td> </tr> <tr> <td>▲ xsd:element</td> <td>= ref</td> <td colspan="2">ErrorMessage</td> </tr> </table>		▲ xsd:element	= ref	ErrorNumberRef		▲ xsd:element	= ref	ErrorMessage													
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▲ xsd:element	= ref	ErrorMessage																					
▲ xsd:element	= name	ErrorNumberRef																					
	= type	ErrorNumberRefDT																					
	▲ xsd:annotation	xsd:documentation Reference to a NERC-registered error																					
▲ xsd:element	= name	ReturnTimeStamp																					
	= type	xsd:date Time																					
	▲ xsd:annotation	xsd:documentation Date time a response was generated																					
▲ xsd:element	= name	StartDateTime																					
	= type	xsd:date Time																					
	▲ xsd:annotation	xsd:documentation Specific point in time representing the beginning of a duration																					
▲ xsd:element	= name	StopDateTime																					
	= type	xsd:date Time																					
	▲ xsd:annotation	xsd:documentation Specific point in time representing the end of a duration																					
▲ xsd:element	= name	TransmissionAllocationID																					
	= type	xsd:integer																					
	▲ xsd:annotation	xsd:documentation Unique identifier for a transmission allocation																					
▲ xsd:element	= name	CorrectionList																					
	▲ xsd:annotation																						

		<b>xsd:documentati...</b> A collection of corrections	
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	Correction
		<b>maxOccurs</b>	unbounded
<b>xsd:element</b>		<b>name</b>	TLREventRef
		<b>type</b>	TLREventIDDT
		<b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Reverence to a TLR Event	
<b>xsd:element</b>		<b>name</b>	RequestProfileChange
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	MessageInfo
		<b>xsd:element</b>	
		<b>ref</b>	TagID
		<b>xsd:element</b>	
		<b>ref</b>	ContactInfo
		<b>minOccurs</b>	0
		<b>xsd:element</b>	
		<b>ref</b>	Notes
		<b>minOccurs</b>	0
		<b>xsd:element</b>	
		<b>ref</b>	MiscInfoList
		<b>minOccurs</b>	0
		<b>xsd:choice</b>	
		<b>xsd:element</b>	
		<b>ref</b>	MarketProfileChange
		<b>xsd:element</b>	
		<b>ref</b>	ReliabilityProfileChan...
<b>xsd:element</b>		<b>name</b>	CallbackHistory
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	MessageInfo
		<b>xsd:element</b>	
		<b>ref</b>	History
<b>xsd:element</b>		<b>name</b>	CallbackHistoryResponse
		<b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Method Response	
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	CallbackHistoryRetum
<b>xsd:element</b>		<b>name</b>	CallbackHistoryRetum
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	ReturnStatus
<b>xsd:element</b>		<b>name</b>	QueryRequestIDs
		<b>xsd:complexType</b>	
		<b>xsd:sequence</b>	
		<b>xsd:element</b>	
		<b>ref</b>	MessageInfo
		<b>xsd:element</b>	
		<b>ref</b>	TagID
		<b>xsd:element</b>	
		<b>ref</b>	RequestStatus
		<b>minOccurs</b>	0
		<b>maxOccurs</b>	unbounded
<b>xsd:element</b>		<b>name</b>	QueryRequestIDsResponse

<table border="1"> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Method Response</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref QueryRequestIDsReturn</td></tr> </table>	▲ xsd:annotation	Ⓜ xsd:documentati... Method Response	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref QueryRequestIDsReturn				
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Ⓜ xsd:documentati... Method Response										
▲ xsd:complexType										
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= ref QueryRequestIDsReturn										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name QueryRequestIDsReturn</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref ReturnStatus</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref RequestIDSummaryList</td></tr> <tr><td>= minOccurs 0</td></tr> </table>	▲ xsd:element	= name QueryRequestIDsReturn	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref ReturnStatus	▲ xsd:element	= ref RequestIDSummaryList	= minOccurs 0	
▲ xsd:element										
= name QueryRequestIDsReturn										
▲ xsd:complexType										
▲ xsd:sequence										
▲ xsd:element										
= ref ReturnStatus										
▲ xsd:element										
= ref RequestIDSummaryList										
= minOccurs 0										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name RequestIDSummaryList</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Collection of request ID Summaries</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref RequestIDSummary</td></tr> <tr><td>= maxOccurs unbounded</td></tr> </table>	▲ xsd:element	= name RequestIDSummaryList	▲ xsd:annotation	Ⓜ xsd:documentati... Collection of request ID Summaries	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref RequestIDSummary	= maxOccurs unbounded	
▲ xsd:element										
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▲ xsd:annotation										
Ⓜ xsd:documentati... Collection of request ID Summaries										
▲ xsd:complexType										
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▲ xsd:element										
= ref RequestIDSummary										
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<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name RequestIDSummary</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Collection of information describing a request ID and its associated status</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref RequestID</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref RequestStatus</td></tr> </table>	▲ xsd:element	= name RequestIDSummary	▲ xsd:annotation	Ⓜ xsd:documentati... Collection of information describing a request ID and its associated status	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref RequestID	▲ xsd:element	= ref RequestStatus
▲ xsd:element										
= name RequestIDSummary										
▲ xsd:annotation										
Ⓜ xsd:documentati... Collection of information describing a request ID and its associated status										
▲ xsd:complexType										
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▲ xsd:element										
= ref RequestStatus										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name RequestStatus</td></tr> <tr><td>= type RequestStatusDT</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Status of an outstanding request</td></tr> </table>	▲ xsd:element	= name RequestStatus	= type RequestStatusDT	▲ xsd:annotation	Ⓜ xsd:documentati... Status of an outstanding request					
▲ xsd:element										
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▲ xsd:annotation										
Ⓜ xsd:documentati... Status of an outstanding request										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name CompositeState</td></tr> <tr><td>= type CompositeStateDT</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Overall Status of an e-Tag</td></tr> </table>	▲ xsd:element	= name CompositeState	= type CompositeStateDT	▲ xsd:annotation	Ⓜ xsd:documentati... Overall Status of an e-Tag					
▲ xsd:element										
= name CompositeState										
= type CompositeStateDT										
▲ xsd:annotation										
Ⓜ xsd:documentati... Overall Status of an e-Tag										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name ActiveRange</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... A range in time within which a query or action should apply</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref StartDateTime</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref StopDateTime</td></tr> </table>	▲ xsd:element	= name ActiveRange	▲ xsd:annotation	Ⓜ xsd:documentati... A range in time within which a query or action should apply	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref StartDateTime	▲ xsd:element	= ref StopDateTime
▲ xsd:element										
= name ActiveRange										
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Ⓜ xsd:documentati... A range in time within which a query or action should apply										
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▲ xsd:sequence										
▲ xsd:element										
= ref StartDateTime										
▲ xsd:element										
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<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name LastModifiedRange</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... Collection of information describing a range of time during which a transaction was last modified</td></tr> <tr><td>▲ xsd:complexType</td></tr> <tr><td>▲ xsd:sequence</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref StartDateTime</td></tr> <tr><td>▲ xsd:element</td></tr> <tr><td>= ref StopDateTime</td></tr> </table>	▲ xsd:element	= name LastModifiedRange	▲ xsd:annotation	Ⓜ xsd:documentati... Collection of information describing a range of time during which a transaction was last modified	▲ xsd:complexType	▲ xsd:sequence	▲ xsd:element	= ref StartDateTime	▲ xsd:element	= ref StopDateTime
▲ xsd:element										
= name LastModifiedRange										
▲ xsd:annotation										
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▲ xsd:complexType										
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▲ xsd:element										
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= ref StopDateTime										
<table border="1"> <tr><td>▲ xsd:element</td></tr> <tr><td>= name CurrentRequestCount</td></tr> <tr><td>= type xsd:integer</td></tr> <tr><td>▲ xsd:annotation</td></tr> <tr><td>Ⓜ xsd:documentati... The request count indicating the number of requests made against the transaction</td></tr> </table>	▲ xsd:element	= name CurrentRequestCount	= type xsd:integer	▲ xsd:annotation	Ⓜ xsd:documentati... The request count indicating the number of requests made against the transaction					
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= type xsd:integer										
▲ xsd:annotation										
Ⓜ xsd:documentati... The request count indicating the number of requests made against the transaction										

<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> RequestProfileChangeResponse</p> <p>▲ <b>xsd:annotation</b>  <span style="color:red">ⓧ</span> <b>xsd:documentati...</b> Method Response</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> RequestProfileChangeReturn</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> RequestProfileChangeReturn</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> ReturnStatus</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> RequestID  <b>= minOccurs</b> 0</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> TimeClassification</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> ActOnByTime</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> CallbackSummaries</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> MessageInfo</p> <p>▲ <b>xsd:choice</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> TagSummaryList</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> Empty</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> CallbackSummariesResponse</p> <p>▲ <b>xsd:annotation</b>  <span style="color:red">ⓧ</span> <b>xsd:documentati...</b> Method Response</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> CallbackSummariesReturn</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> CallbackSummariesReturn</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> ReturnStatus</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> QueryTags</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> MessageInfo</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> TagCredentialList</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> ReturnRate</p> <p>▲ <b>xsd:element</b>  <b>= ref</b> CallbackTarget  <b>= minOccurs</b> 0</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> QueryTagsResponse</p> <p>▲ <b>xsd:annotation</b>  <span style="color:red">ⓧ</span> <b>xsd:documentati...</b> Method Response</p> <p>▲ <b>xsd:complexType</b></p> <p>▲ <b>xsd:sequence</b></p> <p>▲ <b>xsd:element</b>  <b>= ref</b> QueryTagsReturn</p>
<p>▲ <b>xsd:element</b></p>	<p><b>= name</b> QueryTagsReturn</p>

xsd:complexType		xsd:sequence		xsd:element		= ref	ReturnStatus
xsd:element		= name	CallbackTags	xsd:complexType			
		xsd:sequence		xsd:element		= ref	MessageInfo
				xsd:choice			
				xsd:element		= ref	TagList
				xsd:element		= ref	Empty
xsd:element		= name	CallbackTagsResponse	xsd:annotation			
				xsd:documentation		Method Response	
		xsd:complexType		xsd:sequence			
				xsd:element		= ref	CallbackTagsReturn
xsd:element		= name	CallbackTagsReturn	xsd:complexType			
		xsd:sequence		xsd:element		= ref	ReturnStatus
xsd:element		= name	TagCredentialList	xsd:annotation			
				xsd:documentation		Collection of Tag Credentials	
		xsd:complexType		xsd:sequence			
				xsd:element		= ref	TagCredential
						= maxOccurs	unbounded
xsd:element		= name	TagCredential	xsd:annotation			
				xsd:documentation		Collection of data that describes tag identification and access	
		xsd:complexType		xsd:sequence			
				xsd:element		= ref	TagID
				xsd:element		= ref	SecurityKey
xsd:element		= name	TagList	xsd:annotation			
				xsd:documentation		Collection of Tags	
		xsd:complexType		xsd:sequence			
				xsd:element		= ref	Tag
						= maxOccurs	unbounded
xsd:element		= name	Tag	xsd:annotation			
				xsd:documentation		Collection of data that represents a complete transaction document.	
		xsd:complexType		xsd:sequence			
				xsd:element		= ref	TagID
				xsd:element		= ref	CorrectionID
				xsd:element		= ref	TagData

		<table border="1"> <tr><td>xsd:element</td><td>= ref</td><td>ContactInfo</td></tr> <tr><td>xsd:element</td><td>= ref</td><td>TestFlag</td></tr> <tr><td>xsd:element</td><td>= ref</td><td>TransactionType</td></tr> <tr><td>xsd:element</td><td>= ref</td><td>Notes</td></tr> <tr><td>xsd:element</td><td>= ref</td><td>CompositeState</td></tr> <tr><td></td><td>= minOccurs</td><td>0</td></tr> </table>		xsd:element	= ref	ContactInfo	xsd:element	= ref	TestFlag	xsd:element	= ref	TransactionType	xsd:element	= ref	Notes	xsd:element	= ref	CompositeState		= minOccurs	0																								
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▲	xsd:element	<table border="1"> <tr><td>= name</td><td>ReturnRate</td></tr> <tr><td>= type</td><td>xsd:integer</td></tr> <tr><td>▲</td><td>xsd:annotation</td></tr> <tr><td></td><td>ⓧ xsd:documentati... Value indicating the number of payload chunks to be sent back to an entity in response to a query</td></tr> </table>	= name	ReturnRate	= type	xsd:integer	▲	xsd:annotation		ⓧ xsd:documentati... Value indicating the number of payload chunks to be sent back to an entity in response to a query																																			
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▲	xsd:element	<table border="1"> <tr><td>= name</td><td>TagCode</td></tr> <tr><td>▲</td><td>xsd:annotation</td></tr> <tr><td></td><td>ⓧ xsd:documentati... String used to identify a transaction.</td></tr> <tr><td>▲</td><td>xsd:simpleType</td></tr> <tr><td></td><td>▲</td><td>xsd:restriction</td></tr> <tr><td></td><td></td><td>= base</td><td>xsd:string</td></tr> <tr><td></td><td></td><td>▲</td><td>xsd:maxLength</td></tr> <tr><td></td><td></td><td></td><td>= value</td><td>7</td></tr> <tr><td></td><td></td><td>▲</td><td>xsd:minLength</td></tr> <tr><td></td><td></td><td></td><td>= value</td><td>7</td></tr> <tr><td></td><td></td><td>▲</td><td>xsd:pattern</td></tr> <tr><td></td><td></td><td></td><td>= value</td><td>[0-9A-Z]{7}</td></tr> </table>	= name	TagCode	▲	xsd:annotation		ⓧ xsd:documentati... String used to identify a transaction.	▲	xsd:simpleType		▲	xsd:restriction			= base	xsd:string			▲	xsd:maxLength				= value	7			▲	xsd:minLength				= value	7			▲	xsd:pattern				= value	[0-9A-Z]{7}	
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			= value	[0-9A-Z]{7}																																									
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▲	xsd:annotation																																												
	ⓧ xsd:documentati... Method Response																																												
▲	xsd:complexType																																												
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			= ref	CallbackPotentialTLRPprofileChangeReturn																																									
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▲	xsd:element	<table border="1"> <tr><td>= name</td><td>Contact</td></tr> <tr><td>▲</td><td>xsd:annotation</td></tr> <tr><td></td><td>ⓧ xsd:documentati... Name of a contact</td></tr> </table>	= name	Contact	▲	xsd:annotation		ⓧ xsd:documentati... Name of a contact																																					
= name	Contact																																												
▲	xsd:annotation																																												
	ⓧ xsd:documentati... Name of a contact																																												

xsd:simpleType		xsd:restriction		= base	xsd:string
		xsd:maxLength		= value	50
xsd:element		= name	SCCode	= type	TaggingEntityIDDT
		xsd:annotation		xsd:documentation NERC registered ID for a security coordinator	
xsd:element		= name	Impact	= type	xsd:boolean
		xsd:annotation		xsd:documentation Boolean flag used to indicate whether a correction impacts a particular entity or not	
xsd:element		= name	Range	xsd:annotation xsd:documentation Information describing a time duration using absolute references to the start and stop	
		xsd:complexType		xsd:choice	
				xsd:element	= ref ActiveRange
				xsd:element	= ref LastModifiedRange
xsd:element		= name	Action	xsd:annotation xsd:documentation Method Calls and Responses that may be returned in response to a QueryHistory request; subset of all valid method Calls and Responses.	
		xsd:complexType		xsd:choice	
				xsd:sequence	
				xsd:element	= ref DistributeCorrection
				xsd:element	= ref DistributeCorrectionResponse
				= minOccurs	0
				xsd:sequence	
				xsd:element	= ref DistributeNewTag
				xsd:element	= ref DistributeNewTagResponse
				= minOccurs	0
				xsd:sequence	
				xsd:element	= ref DistributeResolution
				xsd:element	= ref DistributeResolutionResponse
				= minOccurs	0
				xsd:sequence	
				xsd:element	= ref DistributeProfileChan...
				xsd:element	= ref DistributeProfileChangeResponse
				= minOccurs	0
				xsd:sequence	
				xsd:element	= ref DistributeStatus
				xsd:element	= ref DistributeStatusResponse
				= minOccurs	0
				xsd:sequence	
				xsd:element	

							= ref	RequestCorrection
				▲ xsd:element			= ref	RequestCorrectionResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	RequestNewTag
					▲ xsd:element		= ref	RequestNewTagResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	RequestProfileChange
					▲ xsd:element		= ref	RequestProfileChangeResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	RequestTerminateTag
					▲ xsd:element		= ref	RequestTerminateTagResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	SetState
					▲ xsd:element		= ref	SetStateResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	WithdrawRequest
					▲ xsd:element		= ref	WithdrawRequestResponse
							= minOccurs	0
				▲ xsd:sequence				
					▲ xsd:element		= ref	Distribute TerminateTag
					▲ xsd:element		= ref	Distribute TerminateTagResponse
							= minOccurs	0

▲ xsd:element								
	= name	ContactInfo						
	▲ xsd:annotation							
			⚠ xsd:documentati...	Collection of information describing a contact				
	▲ xsd:complexType							
				▲ xsd:sequence				
					▲ xsd:element		= ref	Contact
					▲ xsd:element		= ref	Phone
							= minOccurs	0
					▲ xsd:element		= ref	Fax
							= minOccurs	0
▲ xsd:element								
	= name	TestFlag						
	= type	xsd:boolean						
	▲ xsd:annotation							
			⚠ xsd:documentati...	Flag used to identify that a transaction is a "test" transaction				
▲ xsd:element								
	= name	MarketSegmentRef						
	= type	MarketSegmentIDDT						
	▲ xsd:annotation							

		<b>xsd:documentati...</b> Reference to a Market Segment
▲ <b>xsd:element</b>		
	<b>= name</b>	RequestRef
	<b>= type</b>	RequestIDDT
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Reference to a Request ID
▲ <b>xsd:element</b>		
	<b>= name</b>	TransactionType
	<b>= type</b>	TransactionTypeDT
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Specific Transaction Type of the transaction
▲ <b>xsd:element</b>		
	<b>= name</b>	LimitClearing
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Indicator that reliability limit should be removed if present.
	<b>xsd:complexType</b>	
▲ <b>xsd:element</b>		
	<b>= name</b>	AbsoluteBlock
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> A collection of data describing a schedule block; specified through the use of absolute starts and stops combined with a megawatt level.
	▲ <b>xsd:complexType</b>	
	▲ <b>xsd:sequence</b>	
	▲ <b>xsd:element</b>	<b>= ref</b> AbsoluteStart
	▲ <b>xsd:choice</b>	
	▲ <b>xsd:element</b>	<b>= ref</b> MWLevel
	▲ <b>xsd:element</b>	<b>= ref</b> LimitClearing
	▲ <b>xsd:element</b>	<b>= ref</b> AbsoluteStop
▲ <b>xsd:element</b>		
	<b>= name</b>	AbsoluteBlockList
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> A collection of Absolute Blocks
	▲ <b>xsd:complexType</b>	
	▲ <b>xsd:sequence</b>	
	▲ <b>xsd:element</b>	<b>= ref</b> AbsoluteBlock
		<b>= maxOccurs</b> unbounded
▲ <b>xsd:element</b>		
	<b>= name</b>	AbsoluteProfile
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> A collection of data describing energy blocks and the type of energy they represent
	▲ <b>xsd:complexType</b>	
	▲ <b>xsd:sequence</b>	
	▲ <b>xsd:element</b>	<b>= ref</b> AbsoluteBlockList
	▲ <b>xsd:element</b>	<b>= ref</b> ProfileTypeList
▲ <b>xsd:element</b>		
	<b>= name</b>	AbsoluteProfileList
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> A collection of Absolute Profiles
	▲ <b>xsd:complexType</b>	
	▲ <b>xsd:sequence</b>	
	▲ <b>xsd:element</b>	<b>= ref</b> AbsoluteProfile
		<b>= maxOccurs</b> unbounded
▲ <b>xsd:element</b>		
	<b>= name</b>	MWLevel
	<b>= type</b>	xsd:integer
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Level of generation, consumption, or use, as measured in MW
▲ <b>xsd:element</b>		
	<b>= name</b>	ProfileTypeList
	▲ <b>xsd:annotation</b>	
		<b>xsd:documentati...</b> Collection of profile types

<table border="1"> <tr><td>xsd:complexType</td></tr> <tr><td>xsd:sequence</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref ProfileType</td></tr> <tr><td>= maxOccurs unbounded</td></tr> </table>	xsd:complexType	xsd:sequence	xsd:element	= ref ProfileType	= maxOccurs unbounded																
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= ref ProfileType																					
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<table border="1"> <tr><td>xsd:element</td></tr> <tr><td>= name ProfileType</td></tr> <tr><td>= type ProfileTypeDT</td></tr> <tr><td>xsd:annotation</td></tr> <tr><td>xsd:documentation Identifier describing the type of profile a collection of data represents</td></tr> </table>	xsd:element	= name ProfileType	= type ProfileTypeDT	xsd:annotation	xsd:documentation Identifier describing the type of profile a collection of data represents																
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= name LossAccountingList																					
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xsd:documentation Collection of LossAccounting items.																					
xsd:complexType																					
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= ref LossAccounting																					
= maxOccurs unbounded																					
<table border="1"> <tr><td>xsd:element</td></tr> <tr><td>= name LossAccounting</td></tr> <tr><td>xsd:annotation</td></tr> <tr><td>xsd:documentation Collection of information describing the manner in which losses will be accounted for with regards to a particular physical segment</td></tr> <tr><td>xsd:complexType</td></tr> <tr><td>xsd:sequence</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref PhysicalSegmentRef</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref LossMethodEntryList</td></tr> </table>	xsd:element	= name LossAccounting	xsd:annotation	xsd:documentation Collection of information describing the manner in which losses will be accounted for with regards to a particular physical segment	xsd:complexType	xsd:sequence	xsd:element	= ref PhysicalSegmentRef	xsd:element	= ref LossMethodEntryList											
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xsd:documentation Collection of information describing the manner in which losses will be accounted for with regards to a particular physical segment																					
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= ref PhysicalSegmentRef																					
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= ref LossMethodEntryList																					
<table border="1"> <tr><td>xsd:element</td></tr> <tr><td>= name LossMethodEntry</td></tr> <tr><td>xsd:annotation</td></tr> <tr><td>xsd:documentation A collection of data describing the manner in which losses are to be accounted for for a specific period of time</td></tr> <tr><td>xsd:complexType</td></tr> <tr><td>xsd:sequence</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref StartDateTime</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref StopDateTime</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref RequestRef</td></tr> <tr><td>xsd:choice</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref InKind</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref Financial</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref Internal</td></tr> <tr><td>xsd:element</td></tr> <tr><td>= ref External</td></tr> </table>	xsd:element	= name LossMethodEntry	xsd:annotation	xsd:documentation A collection of data describing the manner in which losses are to be accounted for for a specific period of time	xsd:complexType	xsd:sequence	xsd:element	= ref StartDateTime	xsd:element	= ref StopDateTime	xsd:element	= ref RequestRef	xsd:choice	xsd:element	= ref InKind	xsd:element	= ref Financial	xsd:element	= ref Internal	xsd:element	= ref External
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<table border="1"> <tr><td>xsd:element</td></tr> <tr><td>= name InKind</td></tr> <tr><td>xsd:annotation</td></tr> <tr><td>xsd:documentation Loss Type indicating that losses are being scheduled and provided within the same transaction through physical means (i.e., 108 - 106 -104 - 102 - 100 values along the path)</td></tr> <tr><td>xsd:complexType</td></tr> </table>	xsd:element	= name InKind	xsd:annotation	xsd:documentation Loss Type indicating that losses are being scheduled and provided within the same transaction through physical means (i.e., 108 - 106 -104 - 102 - 100 values along the path)	xsd:complexType																
xsd:element																					
= name InKind																					
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xsd:element																					
= name Internal																					
xsd:annotation																					
xsd:documentation Loss Type indicating that losses will be provided through a transaction within the TPs control area.																					
xsd:complexType																					

		<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li><b>xsd:choice</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> = ref ContractNumberList</li> <li><b>xsd:element</b> = ref TagIDList</li> </ul> </li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> External</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> Container for External loss supply information</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:sequence</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> = ref TagIDList</li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> LossMethodEntryList</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> A collection of loss method entries</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:sequence</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li>= ref LossMethodEntry</li> <li>= maxOccurs unbounded</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> TagIDList</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> Collection of Tag IDs</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:sequence</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li>= ref TagID</li> <li>= maxOccurs unbounded</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> EnergyProductRef</li> <li><b>type</b> ProductIDDT</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> Reference to a NERC registered Energy Product</li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> TransmissionAllocationException</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> An exception to a previously specified transmission allocation</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:sequence</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> = ref TransmissionAllocationID</li> <li><b>xsd:element</b> = ref AllocationExceptionProfile</li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> TransmissionAllocationChangeList</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> Collection of transmission allocation changes</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:sequence</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li>= ref TransmissionAllocationChange</li> <li>= maxOccurs unbounded</li> </ul> </li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> TransmissionAllocationChange</li> <li><b>xsd:annotation</b> <ul style="list-style-type: none"> <li><b>xsd:documentation</b> Modification to a transmission allocation</li> </ul> </li> <li><b>xsd:complexType</b> <ul style="list-style-type: none"> <li><b>xsd:choice</b> <ul style="list-style-type: none"> <li><b>xsd:element</b> = ref BaseTransmissionAllocation</li> <li><b>xsd:element</b> = ref TransmissionAllocationException</li> </ul> </li> </ul> </li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li><b>xsd:element</b> <ul style="list-style-type: none"> <li><b>name</b> BaseTransmissionAllocation</li> <li><b>xsd:annotation</b></li> </ul> </li> </ul>		

		<b>xsd:documentati...</b> A collection of information used to describe the manner in which transmission resources are allocated to a transaction
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref TransmissionAllocationID
		<b>xsd:element</b> = ref ParentSegmentRef
		<b>xsd:element</b> = ref TransProductRef
		<b>xsd:element</b> = ref ContractNumber
		<b>xsd:element</b> = ref TransmissionCustomerCode
		<b>xsd:element</b> = ref AllocationBaseProfile
<b>xsd:element</b>	<b>name</b> GCACode <b>type</b> TaggingEntityIDDT <b>xsd:annotation</b>	<b>xsd:documentati...</b> NERC ID for the control area in which the source for the transaction is located
<b>xsd:element</b>	<b>name</b> LCACode <b>type</b> TaggingEntityIDDT <b>xsd:annotation</b>	<b>xsd:documentati...</b> Acronym for the CA in which the Load is located
<b>xsd:element</b>	<b>name</b> ParentMarketSegmentRef <b>type</b> MarketSegmentIDDT <b>xsd:annotation</b>	<b>xsd:documentati...</b> Reference to a physical segment's associated market segment. Cannot be less than the previous physical segment's parent market segment ref.
<b>xsd:element</b>	<b>name</b> RequestTimeStamp <b>type</b> xsd:date Time <b>xsd:annotation</b>	<b>xsd:documentati...</b> Date and time at which a request was made
<b>xsd:element</b>	<b>name</b> RelativeAllocationProfileList <b>xsd:annotation</b>	<b>xsd:documentati...</b> A collection of relative allocation profiles
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref RelativeAllocationProfile <b>maxOccurs</b> unbounded
<b>xsd:element</b>	<b>name</b> AbsoluteAllocationProfileList <b>xsd:annotation</b>	<b>xsd:documentati...</b> A collection of AbsoluteAllocationProfiles
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref AbsoluteAllocationProfile <b>maxOccurs</b> unbounded
<b>xsd:element</b>	<b>name</b> RelativeAllocationProfile <b>xsd:annotation</b>	<b>xsd:documentati...</b> A transmission allocation profile describe in relative terms
<b>xsd:complexType</b>		<b>xsd:sequence</b>
		<b>xsd:element</b> = ref DateTimeList <b>xsd:element</b> = ref RelativeBlockList
<b>xsd:element</b>	<b>name</b> AbsoluteAllocationProfile <b>xsd:annotation</b>	<b>xsd:documentati...</b> A collection of data describing a Transmission Allocation in absolute (date/time specific) terms.

▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	AbsoluteBlockList
▲ <b>xsd:element</b>		= name	AllocationBaseProfile				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> A collection of data describing the initial profile associated with a Transmission Allocation					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	RelativeAllocationProfileList
▲ <b>xsd:element</b>		= name	AllocationExceptionProfile				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> A collection of information describing changes to the base profile of a transmission allocation					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	AbsoluteAllocationProfileList
▲ <b>xsd:element</b>		= name	MarketProfileChange				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> Container for description of Market-based profile change.					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	ExceptionList
						= minOccurs	0
				▲ <b>xsd:element</b>		= ref	TransmissionAllocationChangeList
						= minOccurs	0
				▲ <b>xsd:element</b>		= ref	LossAccountingChangeList
						= minOccurs	0
▲ <b>xsd:element</b>		= name	ReliabilityProfileChange				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> Container for description of Reliability-based profile change.					
▲ <b>xsd:complexType</b>		▲ <b>xsd:choice</b>		▲ <b>xsd:element</b>		= ref	ExceptionList
				▲ <b>xsd:element</b>		= ref	ReliabilityLimitClearing
▲ <b>xsd:element</b>		= name	ReliabilityLimitClearing				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> Used to specify a range of time from which all Reliability Limits should be removed					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	ActiveRange
▲ <b>xsd:element</b>		= name	ExceptionList				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> Collection of Exceptions					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>		= ref	Exception
						= maxOccurs	unbounded
▲ <b>xsd:element</b>		= name	Exception				
▲ <b>xsd:annotation</b>		(X) <b>xsd:documentati...</b> Variance from normal profile					
▲ <b>xsd:complexType</b>		▲ <b>xsd:sequence</b>		▲ <b>xsd:element</b>			

		= ref		ProfileRef
xsd:element		= ref		AbsoluteProfileList
xsd:element		= name	ResourceCorrection	
xsd:annotation		xsd:documentation... Correction of data specifically related to a Generator or Load		
xsd:complexType		xsd:sequence		
xsd:element		= ref	ContractNumberList	
		= minOccurs	0	
xsd:element		= ref	MiscInfoList	
		= minOccurs	0	
xsd:element		= ref	ContactInfo	
		= minOccurs	0	
xsd:element		= name	TransmissionCorrection	
xsd:annotation		xsd:documentation... A correction to a transmission segment		
xsd:complexType		xsd:sequence		
xsd:element		= ref	POR	
xsd:element		= ref	POD	
xsd:element		= ref	TransmissionProfileList	
xsd:element		= ref	SchedulingEntityList	
		= minOccurs	0	
xsd:element		= ref	MiscInfoList	
		= minOccurs	0	
xsd:element		= name	PhysicalSegmentCorrection	
xsd:annotation		xsd:documentation... A correction to be applied to a specific physical segment		
xsd:complexType		xsd:sequence		
xsd:element		= ref	PhysicalSegmentID	
xsd:choice				
xsd:element		= ref	ResourceCorrection	
xsd:element		= ref	TransmissionCorrecti...	
xsd:element		= name	MarketCorrection	
xsd:annotation		xsd:documentation... Correction to a market segment		
xsd:complexType		xsd:sequence		
xsd:element		= ref	EnergyProductRef	
		= minOccurs	0	
xsd:element		= ref	ContractNumberList	
		= minOccurs	0	
xsd:element		= ref	MiscInfoList	
		= minOccurs	0	
xsd:element		= ref	ContactInfo	
		= minOccurs	0	
xsd:element				

<b>name</b> MarketSegmentCorrection	
<b>xsd:annotation</b> <b>xsd:documentation</b> Market Correction as related to a specific market segment	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> MarketSegmentID
<b>xsd:element</b>	<b>ref</b> MarketCorrection
<b>xsd:element</b>	
<b>name</b> TransmissionAllocationCorrection	
<b>xsd:annotation</b> <b>xsd:documentation</b> A correction to specific transmissison allocation information	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> TransmissionAllocationID
<b>xsd:element</b>	<b>ref</b> ParentSegmentRef
<b>xsd:element</b>	<b>ref</b> TransProductRef
<b>xsd:element</b>	<b>ref</b> ContractNumber
<b>xsd:element</b>	<b>ref</b> TransmissionCustomerCode
<b>xsd:element</b>	
<b>name</b> LossAccountingCorrection	
<b>xsd:annotation</b> <b>xsd:documentation</b> A correction to the loss accounting portions of a transaction	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> PhysicalSegmentID
<b>xsd:element</b>	<b>ref</b> LossMethodCorrectionList
<b>xsd:element</b>	
<b>name</b> LossMethodCorrection	
<b>xsd:annotation</b> <b>xsd:documentation</b> A correction to a loss provision method	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> StartDateTime
<b>xsd:element</b>	<b>ref</b> StopDateTime
<b>xsd:element</b>	<b>ref</b> RequestRef
<b>xsd:choice</b>	
<b>xsd:element</b>	<b>ref</b> InKind
<b>xsd:element</b>	<b>ref</b> Financial
<b>xsd:element</b>	<b>ref</b> Internal
<b>xsd:element</b>	<b>ref</b> External
<b>xsd:element</b>	
<b>name</b> LossAccountingChangeList	
<b>xsd:annotation</b> <b>xsd:documentation</b> Collection of LossAccountingChanges	
<b>xsd:complexType</b>	
<b>xsd:sequence</b>	
<b>xsd:element</b>	<b>ref</b> LossAccountingChange
<b>maxOccurs</b>	unbounded
<b>xsd:element</b>	
<b>name</b> LossAccountingChange	
<b>xsd:annotation</b> <b>xsd:documentation</b> Change in Loss Accounting that results in an exception	

xsd:complexType		xsd:sequence		xsd:element		= ref	PhysicalSegmentRef
				xsd:element		= ref	LossMethodChangeList
xsd:element		= name	LossMethodChangeList	xsd:annotation		xsd:documentation... Collection of Loss Method Changes	
		xsd:complexType		xsd:sequence		xsd:element	
						= ref	LossMethodChange
						= maxOccurs	unbounded
xsd:element		= name	LossMethodChange	xsd:annotation		xsd:documentation... Change to create an exception based on loss provision type change	
		xsd:complexType		xsd:sequence		xsd:element	
						= ref	StartDateTime
						= ref	StopDateTime
				xsd:choice		xsd:element	
						= ref	InKind
						= ref	Financial
						= ref	Internal
						= ref	External
xsd:element		= name	ExceptionProfileChangeList	xsd:annotation		xsd:documentation... Collection of Exception Profile Changes	
		xsd:complexType		xsd:sequence		xsd:element	
						= ref	ExceptionProfile
						= maxOccurs	unbounded
xsd:element		= name	ExceptionProfileChange	xsd:annotation		xsd:documentation... Specific change creating an exception	
		xsd:complexType		xsd:sequence		xsd:element	
						= ref	ProfileID
						= ref	AbsoluteProfileList
xsd:element		= name	Empty	xsd:complexType			
xsd:element		= name	LossMethodCorrectionList	xsd:annotation		xsd:documentation... A collection of Loss Method Corrections	
		xsd:complexType		xsd:sequence		xsd:element	
						= ref	LossMethodCorrection
						= maxOccurs	unbounded
xsd:element		= name	ResolutionProfile	xsd:annotation		xsd:documentation... Used to indicate the resultant Current Level profile following request resolution.	

<b>xsd:complexType</b>		<b>xsd:choice</b>		<b>xsd:element</b>		= ref	BaseProfileList
				<b>xsd:element</b>		= ref	ExceptionProfileSet
<b>xsd:element</b>		= name	QueryAvailability	<b>xsd:complexType</b>			
				<b>xsd:sequence</b>			
				<b>xsd:element</b>		= ref	FromEntity
				<b>xsd:element</b>		= ref	ToEntity
<b>xsd:element</b>		= name	QueryAvailabilityResponse	<b>xsd:annotation</b>		<b>xsd:documentati...</b> Method Response	
				<b>xsd:complexType</b>			
				<b>xsd:sequence</b>			
				<b>xsd:element</b>		= ref	QueryAvailabilityReturn
<b>xsd:element</b>		= name	QueryAvailabilityReturn	<b>xsd:complexType</b>			
				<b>xsd:sequence</b>			
				<b>xsd:element</b>		= ref	ResponseStatus
<b>xsd:element</b>		= name	ApprovalTimeStamp	= type	xsd:dateTime	<b>xsd:annotation</b>	
				<b>xsd:documentati...</b>		DateTime indicating when approval action was taken.	
<b>xsd:element</b>		= name	Requestor	<b>xsd:annotation</b>		<b>xsd:documentati...</b> Used to identify the initiator of a request. Should be equal to the "from" entity declared in the original request.	
				<b>xsd:complexType</b>			
				<b>xsd:sequence</b>			
				<b>xsd:element</b>		= ref	Entity
<b>xsd:element</b>		= name	CallbackTarget	= type	CallbackTargetDT	<b>xsd:annotation</b>	
				<b>xsd:documentati...</b>		The destination of a callback message	
<b>xsd:simpleType</b>		= name	CallbackTargetDT	<b>xsd:annotation</b>		<b>xsd:documentati...</b> Data type used to specify the destination of a callback message	
				<b>xsd:restriction</b>			
		= base	xsd:string	<b>xsd:enumeration</b>		= value	PRIMARY
				<b>xsd:enumeration</b>		= value	SECONDARY

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" version="1.8.000">
  <xsd:element name="AbsoluteStart">
    <xsd:annotation>
      <xsd:documentation>Collection of information describing the
beginning of a schedule block, specified in absolute terms (precise date-
time).</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="DateTime"/>
        <xsd:element ref="RampDuration" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="AbsoluteStop">
    <xsd:annotation>
      <xsd:documentation>Collection of information describing the end
of a schedule block, specified in absolute terms (precise date-time).</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="DateTime"/>
        <xsd:element ref="RampDuration" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="DistributeResolution">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="MessageInfo"/>
        <xsd:element ref="TagID"/>
        <xsd:element ref="RequestRef"/>
        <xsd:element ref="RequestStatus"/>
        <xsd:element ref="CompositeState"/>
        <xsd:element ref="ImplementTime" minOccurs="0"/>
        <xsd:element ref="TerminationTime" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="DistributeResolutionResponse">
    <xsd:annotation>
      <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
      <xsd:sequence>
```

```

        <xsd:element ref="DistributeResolutionReturn"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DistributeResolutionReturn" nillable="true">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SetState">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="TagID"/>
            <xsd:element ref="RequestRef"/>
            <xsd:element ref="ApprovalStatus"/>
            <xsd:element ref="Notes" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SetStateResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="SetStateReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SetStateReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Entity">
    <xsd:annotation>
        <xsd:documentation>Any one of the possible parties to an e-
Tag</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>

```

```

        <xsd:element ref="PSECode"/>
        <xsd:element ref="CACode"/>
        <xsd:element ref="TPCode"/>
        <xsd:element ref="SCCode"/>
    </xsd:choice>
</xsd:complexType>
</xsd:element>
<xsd:element name="Status">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing an
entity's delivery status (and optionally approval status) for a
request.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Entity"/>
            <xsd:element ref="DeliveryStatus"/>
            <xsd:element ref="ApprovalStatus"/>
            <xsd:element ref="ApprovalStatusType"/>
            <xsd:element ref="ApprovalTimeStamp" minOccurs="0"/>
            <xsd:element ref="Notes" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="StatusList">
    <xsd:annotation>
        <xsd:documentation>Collection of all approval statuses for a given
request</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Status" maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="BaseProfile">
    <xsd:annotation>
        <xsd:documentation>A collection of relative profiles, used to
describe an newly requested energy schedule</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ProfileID"/>
            <xsd:element ref="RelativeProfileList"/>
        </xsd:sequence>
    </xsd:complexType>

```

```
</xsd:element>
<xsd:element name="BaseProfileList">
  <xsd:annotation>
    <xsd:documentation>A collection of base
profiles</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="BaseProfile"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="ContractNumber" nillable="true">
  <xsd:annotation>
    <xsd:documentation>Number referencing an agreement for service
(i.e., energy contract, transmission reservation, etc...)</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleType>
    <xsd:restriction base="xsd:string">
      <xsd:maxLength value="50"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:element>
<xsd:element name="CACode" type="TaggingEntityIDDT">
  <xsd:annotation>
    <xsd:documentation>Unique ID from the NERC Registry used to
identify a Balancing Authority</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Correction">
  <xsd:annotation>
    <xsd:documentation>A set of changing information that is being
applied to a transaction during the approval process.</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:choice>
      <xsd:element ref="PhysicalSegmentCorrection"/>
      <xsd:element ref="MarketSegmentCorrection"/>
      <xsd:element ref="TransmissionAllocationCorrection"/>
      <xsd:element ref="LossAccountingCorrection"/>
    </xsd:choice>
  </xsd:complexType>
</xsd:element>
<xsd:element name="CorrectionID" type="CorrectionIDDT"/>
<xsd:element name="RequestCorrection">
```

```

    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="MessageInfo"/>
        <xsd:element ref="ContactInfo"/>
        <xsd:element ref="TagID"/>
        <xsd:element ref="CorrectionList"/>
        <xsd:element ref="Notes" minOccurs="0"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="RequestCorrectionResponse">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="RequestCorrectionReturn"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="RequestCorrectionReturn">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="ReturnStatus"/>
        <xsd:element ref="CorrectionID"/>
        <xsd:element ref="TimeClassification"/>
        <xsd:element ref="ActOnByTime"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="TLRProfileChange">
    <xsd:annotation>
      <xsd:documentation>Specification of a TLR's limit being set on a
particular transaction</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element ref="TagID"/>
        <xsd:element ref="ReliabilityLevel"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="TLRProfileChangeList">
    <xsd:annotation>
      <xsd:documentation>Collection of TLR profile
changes</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
      <xsd:sequence>

```

```

        <xsd:element ref="TLRProfileChange"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="TerminationTime" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>Termination time plus associated end ramp.
This date/time is calculated by the Authority</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ImplementTime" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>e-Tag ramp start time, time at which e-Tag
transitions from CONFIRMED to IMPLEMENTED</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ActOnByTime" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>The time by which an approval entity must
actively approve or deny a request</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="DateTime" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>A point in time identified by both a date and
time</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="DateTimeList">
    <xsd:annotation>
        <xsd:documentation>A collection of
DateTimes</xsd:documentation>
    </xsd:annotation>
<xsd:complexType>
    <xsd:sequence>
        <xsd:element ref="DateTime" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeliveryStatus" type="DeliveryStatusDT">
    <xsd:annotation>
        <xsd:documentation>The status of a request distribution with
regard to a particular party</xsd:documentation>
    </xsd:annotation>
</xsd:element>

```

```

<xsd:simpleType name="DeliveryStatusDT">
  <xsd:annotation>
    <xsd:documentation>Data type used to specify the status for a
request distribution's delivery</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="QUEUED"/>
    <xsd:enumeration value="DELIVERED"/>
    <xsd:enumeration value="INVALID"/>
    <xsd:enumeration value="COMMFAIL"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ApprovalStatusDT">
  <xsd:annotation>
    <xsd:documentation>Data type used to specify an entity's
approval/denial of a transaction request</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NA"/>
    <xsd:enumeration value="PENDING"/>
    <xsd:enumeration value="APPROVED"/>
    <xsd:enumeration value="DENIED"/>
    <xsd:enumeration value="STUDY"/>
    <xsd:enumeration value="EXPIRED"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ApprovalStatusTypeDT">
  <xsd:annotation>
    <xsd:documentation>Data type used to indicate the manner in
which an Approval Status was set</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NA"/>
    <xsd:enumeration value="ACTIVE"/>
    <xsd:enumeration value="PASSIVE"/>
    <xsd:enumeration value="OVERRIDE"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ReturnValueDT">
  <xsd:annotation>
    <xsd:documentation>Data Type used to indicate the success or
failure of a method call</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="SUCCESS"/>
    <xsd:enumeration value="FAIL"/>

```

```

        <xsd:enumeration value="DUPLICATE"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="RequestStatusDT">
    <xsd:annotation>
        <xsd:documentation>Data Type used to indicate the disposition of
a request</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="PENDING"/>
        <xsd:enumeration value="WITHDRAWN"/>
        <xsd:enumeration value="APPROVED"/>
        <xsd:enumeration value="DENIED"/>
        <xsd:enumeration value="EXPIRED"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="CompositeStateDT">
    <xsd:annotation>
        <xsd:documentation> Data Type used to indicate the overall state
of an e-Tag</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="PENDING"/>
        <xsd:enumeration value="WITHDRAWN"/>
        <xsd:enumeration value="DENIED"/>
        <xsd:enumeration value="EXPIRED"/>
        <xsd:enumeration value="CONFIRMED"/>
        <xsd:enumeration value="IMPLEMENTED"/>
        <xsd:enumeration value="CANCELLED"/>
        <xsd:enumeration value="TERMINATED"/>
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="PhoneNumberDT">
    <xsd:annotation>
        <xsd:documentation>Telephone Number</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:pattern value="([0-9]{3}-)?([0-9]{3})[0-9]{3}-[0-
9]{4}(X[0-9]{1,10})?" />
    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="TransactionTypeDT">
    <xsd:annotation>
        <xsd:documentation>Used to specify a type of
transaction</xsd:documentation>
    </xsd:annotation>

```

```

        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="NORMAL"/>
            <xsd:enumeration value="DYNAMIC"/>
            <xsd:enumeration value="EMERGENCY"/>
            <xsd:enumeration value="LOSSSUPPLY"/>
            <xsd:enumeration value="CAPACITY"/>
            <xsd:enumeration value="RECALLABLE"/>
            <xsd:enumeration value="PSEUDOTIE"/>
        </xsd:restriction>
    </xsd:simpleType>
    <xsd:simpleType name="ProfileTypeDT">
        <xsd:annotation>
            <xsd:documentation>Used to specify a profile
type</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="MARKETLEVEL"/>
            <xsd:enumeration value="RELIABILITYLIMIT"/>
        </xsd:restriction>
    </xsd:simpleType>
    <xsd:simpleType name="ErrorNumberRefDT">
        <xsd:annotation>
            <xsd:documentation>Error Number ID, based on NERC
registry</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="RequestIDDT">
        <xsd:annotation>
            <xsd:documentation>Unique ID for a
request</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="PhysicalSegmentIDDT">
        <xsd:annotation>
            <xsd:documentation>Unique ID for a physical
segment</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="ProfileIDDT">
        <xsd:annotation>
            <xsd:documentation>Unique ID for a
profile</xsd:documentation>
        </xsd:annotation>

```

```

        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="MarketSegmentIDDT">
        <xsd:annotation>
            <xsd:documentation>Unique ID for a market
segment</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="CorrectionIDDT">
        <xsd:annotation>
            <xsd:documentation>Unique ID for a
correction</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="TaggingSourceSinkPointIDDT">
        <xsd:annotation>
            <xsd:documentation>Tagging Point ID, based on NERC
registry</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="OASISPORPODPointIDDT">
        <xsd:annotation>
            <xsd:documentation>OASIS Point ID, based on NERC
registry</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="ProductIDDT">
        <xsd:annotation>
            <xsd:documentation>Product ID, based on NERC
registry</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="TLREventIDDT">
        <xsd:annotation>
            <xsd:documentation>TRL Event ID</xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="xsd:integer"/>
    </xsd:simpleType>
    <xsd:simpleType name="OASISEntityIDDT">
        <xsd:annotation>

```

```

                <xsd:documentation>OASIS Entity ID, based on NERC
registry</xsd:documentation>
                </xsd:annotation>
                <xsd:restriction base="xsd:integer"/>
            </xsd:simpleType>
            <xsd:simpleType name="TaggingEntityIDDT">
                <xsd:annotation>
                    <xsd:documentation>Tagging Entity ID, based on NERC
registry</xsd:documentation>
                </xsd:annotation>
                <xsd:restriction base="xsd:integer"/>
            </xsd:simpleType>
            <xsd:element name="Load">
                <xsd:annotation>
                    <xsd:documentation>Information defining the consumption point
of the energy from a transaction</xsd:documentation>
                </xsd:annotation>
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element ref="ResourceList"/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
            <xsd:element name="DistributeProfileChange">
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element ref="MessageInfo"/>
                        <xsd:element ref="TagID"/>
                        <xsd:element ref="ApprovalRights"/>
                        <xsd:element ref="RequestID"/>
                        <xsd:element ref="Requestor"/>
                        <xsd:element ref="ExceptionProfileChangeList"
minOccurs="0"/>
                        <xsd:element ref="TransmissionAllocationChangeList"
minOccurs="0"/>
                        <xsd:element ref="LossAccountingChangeList"
minOccurs="0"/>
                        <xsd:element ref="ContactInfo" minOccurs="0"/>
                        <xsd:element ref="Notes" minOccurs="0"/>
                        <xsd:element ref="MiscInfoList" minOccurs="0"/>
                        <xsd:element ref="RequestTimeStamp"/>
                        <xsd:element ref="TimeClassification"/>
                        <xsd:element ref="ActOnByTime"/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>

```

```

<xsd:element name="DistributeProfileChangeResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="DistributeProfileChangeReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeProfileChangeReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeCorrection">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MessageInfo"/>
      <xsd:element ref="ContactInfo" minOccurs="0"/>
      <xsd:element ref="TagID"/>
      <xsd:element ref="CorrectionID"/>
      <xsd:element ref="Requestor"/>
      <xsd:element ref="CorrectionList"/>
      <xsd:element ref="Impact"/>
      <xsd:element ref="RequestTimeStamp"/>
      <xsd:element ref="TimeClassification"/>
      <xsd:element ref="ActOnByTime"/>
      <xsd:element ref="Notes" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeCorrectionResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="DistributeCorrectionReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeCorrectionReturn">
  <xsd:complexType>

```

```

        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributePotentialTLRProfileChange">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="StartDateTime"/>
            <xsd:element ref="TLREventRef"/>
            <xsd:element ref="MiscInfoList"/>
            <xsd:element ref="TLRProfileChangeList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributePotentialTLRProfileChangeReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeNewTag">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="Tag"/>
            <xsd:element ref="ApprovalRights"/>
            <xsd:element ref="RequestTimeStamp"/>
            <xsd:element ref="TimeClassification"/>
            <xsd:element ref="ActOnByTime"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeNewTagResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="DistributeNewTagReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeNewTagReturn">

```

```

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="ErrorList">
        <xsd:annotation>
            <xsd:documentation>Collection of errors</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="Error" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="ErrorMessage">
        <xsd:annotation>
            <xsd:documentation>A situation-specific error describing in detail
the reason an error was assigned to a transaction</xsd:documentation>
        </xsd:annotation>
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:maxLength value="128"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:element>
    <xsd:element name="ExceptionProfile">
        <xsd:annotation>
            <xsd:documentation>A profile that indicates a variance from the
base profile</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ProfileRef"/>
                <xsd:element ref="AbsoluteProfileList"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="ExceptionProfileList">
        <xsd:annotation>
            <xsd:documentation>A collection of exception
profiles</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>

```

```

        <xsd:element ref="ExceptionProfile"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ExceptionProfileSet">
    <xsd:annotation>
        <xsd:documentation>The collection of all exception profiles and
the request IDS associated with them</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ExceptionProfileList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Fax" type="PhoneNumberDT">
    <xsd:annotation>
        <xsd:documentation>Fax number</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="FromEntity">
    <xsd:annotation>
        <xsd:documentation>Container for the ID of an entity sending a
message</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="PSECode"/>
            <xsd:element ref="CACode"/>
            <xsd:element ref="TPCode"/>
            <xsd:element ref="SCCode"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Generation">
    <xsd:annotation>
        <xsd:documentation>Region or plant form which generation is
being procured</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ResourceList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

```

```

<xsd:element name="QueryHistory">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MessageInfo"/>
      <xsd:element ref="TagID"/>
      <xsd:element ref="CallbackTarget" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryHistoryResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="QueryHistoryReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryHistoryReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryRequest">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MessageInfo"/>
      <xsd:element ref="TagID"/>
      <xsd:element ref="RequestRef"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryRequestResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="QueryRequestReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryRequestReturn">

```

```

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
                <xsd:choice minOccurs="0">
                    <xsd:element ref="DistributeProfileChange"/>
                    <xsd:element ref="DistributeTerminateTag"/>
                </xsd:choice>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryStatus">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="TagID"/>
                <xsd:element ref="RequestRef"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryStatusResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="QueryStatusReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryStatusReturn">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
                <xsd:element ref="RequestStatus" minOccurs="0"/>
                <xsd:element ref="StatusList" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryTag">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="TagID"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

```

```

<xsd:element name="QueryTagResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="QueryTagReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="QueryTagReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
      <xsd:element ref="Tag" minOccurs="0"/>
      <xsd:element ref="ApprovalRights"/>
      <xsd:element ref="RequestTimeStamp"/>
      <xsd:element ref="TimeClassification"/>
      <xsd:element ref="ActOnByTime"/>
      <xsd:element ref="ImplementTime" minOccurs="0"/>
      <xsd:element ref="TerminationTime" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="History">
  <xsd:annotation>
    <xsd:documentation>Collection of information describing the
transactional history associated with a particular tag</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="Action" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="MarketSegment">
  <xsd:annotation>
    <xsd:documentation>A collection of information describing the
role of a market participant with regard to portions of a transaction</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MarketSegmentID"/>
      <xsd:element ref="PSECode"/>
      <xsd:element ref="EnergyProductRef" minOccurs="0"/>
      <xsd:element ref="ContractNumberList" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

        <xsd:element ref="MiscInfoList" minOccurs="0"/>
        <xsd:element ref="ContactInfo" minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="MarketSegmentID" type="MarketSegmentIDDT">
    <xsd:annotation>
        <xsd:documentation>Unique identifier for a market Segment.
Should be representative of the order of the market segments, with the first segment
being labeled "1" and the last being labeled with the total number of segments. For
example, For three market segments, the GPE would be a "1," the intermediate PSE
would be "2," and the LSE would be "3."</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="CCList">
    <xsd:annotation>
        <xsd:documentation>A Collection of Entities to be provided with
copies of e-Tag</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Entity" maxOccurs="5"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MarketSegmentList">
    <xsd:annotation>
        <xsd:documentation>A Collection of Market
Segments</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MarketSegment"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MessageInfo">
    <xsd:annotation>
        <xsd:documentation>A collection of information describing the
communication aspects of a method call</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="FromEntity"/>
            <xsd:element ref="SecurityKey"/>

```

```

        <xsd:element ref="ToEntity"/>
        <xsd:element ref="CallTimeStamp"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="MiscInfo">
    <xsd:annotation>
        <xsd:documentation>Generic container of
information</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Token"/>
            <xsd:element ref="Value"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MiscInfoList">
    <xsd:annotation>
        <xsd:documentation>Collection of MiscInfo
items</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MiscInfo" maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Notes" nillable="true">
    <xsd:annotation>
        <xsd:documentation>Generic holder of note
information</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleType>
        <xsd:restriction base="xsd:string">
            <xsd:maxLength value="128"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:element>
<xsd:element name="DistributeStatus">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="TagID"/>
            <xsd:element ref="RequestRef"/>
            <xsd:element ref="StatusList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

```

```

        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeStatusResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="DistributeStatusReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeStatusReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeTerminateTag">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="TagID"/>
            <xsd:element ref="ApprovalRights"/>
            <xsd:element ref="RequestRef"/>
            <xsd:element ref="Requestor"/>
            <xsd:element ref="AbsoluteStart"/>
            <xsd:element ref="TimeClassification"/>
            <xsd:element ref="RequestTimeStamp"/>
            <xsd:element ref="ActOnByTime"/>
            <xsd:element ref="ContactInfo" minOccurs="0"/>
            <xsd:element ref="Notes" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DistributeTerminateTagResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="DistributeTerminateTagReturn"/>
        </xsd:sequence>
    </xsd:complexType>

```

```

</xsd:element>
<xsd:element name="DistributeTerminateTagReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="ParentSegmentRef" type="PhysicalSegmentIDDT">
  <xsd:annotation>
    <xsd:documentation>Reference to a transmission allocation's
parent physical segment</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Phone" type="PhoneNumberDT">
  <xsd:annotation>
    <xsd:documentation>Phone number</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PhysicalSegmentRef" type="PhysicalSegmentIDDT">
  <xsd:annotation>
    <xsd:documentation>Reference to a physical
segment</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PhysicalSegmentID" type="PhysicalSegmentIDDT">
  <xsd:annotation>
    <xsd:documentation>Unique identifier for a physical segment.
Should be representative of the order of the physical segments, with the first segment
being labeled "1" and the last being labeled with the total number of segments. . For
example, for four physical segments, the Generation would be a "1," the first leg of
transmission would be "2," the second leg of transmission would be "3," and the Load
would be "4."</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="POD" type="OASISPORPODPointIDDT">
  <xsd:annotation>
    <xsd:documentation>Point of Delivery</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PODProfile">
  <xsd:annotation>
    <xsd:documentation>profile associated with a
POD</xsd:documentation>
  </xsd:annotation>
<xsd:complexType>

```

```

        <xsd:sequence>
            <xsd:element ref="ProfileRef"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="POR" type="OASISPORPODPointIDDT">
    <xsd:annotation>
        <xsd:documentation>Point of Receipt</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="PORProfile">
    <xsd:annotation>
        <xsd:documentation>Profile associated with a
POR</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ProfileRef"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TransProductRef" type="ProductIDDT">
    <xsd:annotation>
        <xsd:documentation>Reference to a NERC registered transmission
product</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="PSECode" type="TaggingEntityIDDT">
    <xsd:annotation>
        <xsd:documentation>Unique ID for a PSE, as specified in the
NERC registry</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="RampDuration" type="xsd:integer">
    <xsd:annotation>
        <xsd:documentation>Amount of time, in minutes, over which a
generator's output is increased or decreased</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ReturnValue" type="ReturnValueDT">
    <xsd:annotation>
        <xsd:documentation>Value used to indicate the results of a
method call</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="TimeClassification">

```

```

        <xsd:annotation>
            <xsd:documentation>Enumerated Value indicating whether the e-
Tag was classified as ontime, late, or ATF by the Authority based on
CallTimeStamp</xsd:documentation>
        </xsd:annotation>
    </xsd:simpleType>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="OnTime"/>
        <xsd:enumeration value="Late"/>
        <xsd:enumeration value="ATF"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:element>
<xsd:element name="RelativeBlock">
    <xsd:annotation>
        <xsd:documentation>A collection of information describing an
energy flow in relative terms (a static date/time combined with an offset from that
date/time).</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RelativeStart"/>
            <xsd:element ref="MWLevel"/>
            <xsd:element ref="RelativeStop"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RelativeBlockList">
    <xsd:annotation>
        <xsd:documentation>A collection of relative
blocks</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RelativeBlock"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RelativeProfile">
    <xsd:annotation>
        <xsd:documentation>A Profile described in relative terms, using
relative blocks</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>

```

```
        <xsd:element ref="DateTimeList"/>
        <xsd:element ref="RelativeBlockList"/>
        <xsd:element ref="ProfileTypeList"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RelativeProfileList">
    <xsd:annotation>
        <xsd:documentation>A collection of relative
profiles</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RelativeProfile"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RelativeStart">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing the
beginning of an energy block, specified in relative terms (offset from a reference date-
time).</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TimeOffset"/>
            <xsd:element ref="RampDuration" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RelativeStop">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing the end
of an energy block, specified in relative terms (offset from a reference date-
time).</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TimeOffset"/>
            <xsd:element ref="RampDuration" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ReliabilityLevel" type="xsd:integer" nillable="true">
    <xsd:annotation>
```

```

        <xsd:documentation>Level used to specify limits on transactions
when identified for curtailment</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="QuerySummaries">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="Range"/>
            <xsd:element ref="CallbackTarget" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="QuerySummariesReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="QuerySummariesResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="QuerySummariesReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Resource">
    <xsd:annotation>
        <xsd:documentation>General container for a generation or
load</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TaggingPointID"/>
            <xsd:element ref="ProfileRef"/>
            <xsd:element ref="ContractNumberList" minOccurs="0"/>
            <xsd:element ref="MiscInfoList" minOccurs="0"/>
            <xsd:element ref="ContactInfo" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ResourceList">
```

```
<xsd:annotation>
  <xsd:documentation>Collection of resources. At this point in
time, is limited to only one resource.</xsd:documentation>
</xsd:annotation>
<xsd:complexType>
  <xsd:sequence>
    <xsd:element ref="Resource"/>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RequestID" type="RequestIDDT">
  <xsd:annotation>
    <xsd:documentation>unique ID associated with a specific
transaction</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ProfileID" type="ProfileIDDT">
  <xsd:annotation>
    <xsd:documentation>Unique identifier for a
profile</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ProfileRef" type="ProfileIDDT">
  <xsd:annotation>
    <xsd:documentation>Reference to a profile</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ProfileSet">
  <xsd:annotation>
    <xsd:documentation>Collection of profiles; both base and
exception</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="BaseProfileList"/>
      <xsd:element ref="ExceptionProfileSet" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="SchedulingEntity">
  <xsd:annotation>
    <xsd:documentation>Entity that is responsible for operationally
scheduling flows resultant form the scheduling of a transmission reservation.
</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
```

```

        <xsd:choice>
            <xsd:element ref="CACode"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SchedulingEntityList">
    <xsd:annotation>
        <xsd:documentation>A collection of scheduling entities. Should
be in scheduling path order.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="SchedulingEntity"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="SecurityKey">
    <xsd:annotation>
        <xsd:documentation>Unique key sued for access control to a
transaction</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleType>
        <xsd:restriction base="xsd:string">
            <xsd:maxLength value="12"/>
            <xsd:minLength value="12"/>
            <xsd:pattern value="[0-9a-zA-Z]{12}"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:element>
<xsd:element name="PhysicalSegment">
    <xsd:annotation>
        <xsd:documentation> collection of data describing a physical
portion of the transaction path</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="PhysicalSegmentID"/>
            <xsd:element ref="ParentMarketSegmentRef"/>
            <xsd:choice>
                <xsd:element ref="Generation"/>
                <xsd:element ref="Load"/>
                <xsd:element ref="Transmission"/>
            </xsd:choice>
        </xsd:sequence>
    </xsd:complexType>

```

```
</xsd:element>
<xsd:element name="PhysicalSegmentList">
  <xsd:annotation>
    <xsd:documentation>Collection of physical
segments</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="PhysicalSegment"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="TaggingPointID" type="TaggingSourceSinkPointIDDT">
  <xsd:annotation>
    <xsd:documentation>Generation or Load
point</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ApprovalStatus" type="ApprovalStatusDT">
  <xsd:annotation>
    <xsd:documentation>Used to indicate an Approval Entity's
decision to support or not support implementation of a request</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ApprovalStatusType" type="ApprovalStatusTypeDT">
  <xsd:annotation>
    <xsd:documentation>Specifies whether an approval state was set
via active or passive means</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="RequestNewTagResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="RequestNewTagReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="RequestNewTagReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
      <xsd:element ref="RequestID" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```

        <xsd:element ref="TimeClassification"/>
        <xsd:element ref="ActOnByTime"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RequestNewTag">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="Tag"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagSummary">
    <xsd:annotation>
        <xsd:documentation>Brief overview of Tag transaction al data and
credentials</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TagID"/>
            <xsd:element ref="SecurityKey"/>
            <xsd:element ref="CorrectionID"/>
            <xsd:element ref="CurrentRequestCount"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagData">
    <xsd:annotation>
        <xsd:documentation>Basic transaction information, describes the
transaction as a physical schedule supported by transmission</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MarketSegmentList"/>
            <xsd:element ref="PhysicalSegmentList"/>
            <xsd:element ref="CCList" minOccurs="0"/>
            <xsd:element ref="ProfileSet"/>
            <xsd:element ref="TransmissionAllocationList"/>
            <xsd:element ref="LossAccountingList" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagID">
    <xsd:annotation>

```

```

        <xsd:documentation>Collection of information that uniquely
identifies a tag</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="GCACode"/>
            <xsd:element ref="PSECode"/>
            <xsd:element ref="TagCode"/>
            <xsd:element ref="LCACode"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagSummaryList">
    <xsd:annotation>
        <xsd:documentation>Collection of tag
summaries</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TagSummary"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TimeOffset" type="xsd:duration">
    <xsd:annotation>
        <xsd:documentation>Duration to be combined with a static
date/time to generate a specific point in time.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="CallTimeStamp" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>Time at which a method call was made,
according to the caller.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ToEntity">
    <xsd:annotation>
        <xsd:documentation>Entity to which a message is being
sent</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="PSECode"/>
            <xsd:element ref="CACode"/>
            <xsd:element ref="TPCode"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>

```

```

        <xsd:element ref="SCCCode"/>
    </xsd:choice>
</xsd:complexType>
</xsd:element>
<xsd:element name="Token">
    <xsd:annotation>
        <xsd:documentation>generic label to describe miscellaneous
data</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleType>
        <xsd:restriction base="xsd:string">
            <xsd:maxLength value="128"/>
            <xsd:minLength value="1"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:element>
<xsd:element name="TransmissionProfile">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing a
transmission providers import (POR) and export (POD) profiles</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="PORProfile"/>
            <xsd:element ref="PODProfile"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TransmissionAllocation">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing the
manner in which a transmission reservation is being used to supply a transaction with
transmission resources</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TransmissionAllocationID"/>
            <xsd:element ref="ParentSegmentRef"/>
            <xsd:element ref="TransProductRef"/>
            <xsd:element ref="ContractNumber"/>
            <xsd:element ref="TransmissionCustomerCode"/>
            <xsd:element ref="AllocationBaseProfile"/>
            <xsd:element ref="AllocationExceptionProfile"
minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>

```

```

</xsd:element>
<xsd:element name="TransmissionAllocationList">
  <xsd:annotation>
    <xsd:documentation>Collection of transmission
allocations</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="TransmissionAllocation"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="TransmissionCustomerCode" type="OASISEntityIDDT">
  <xsd:annotation>
    <xsd:documentation>Unique ID per the NERC Registry
specifying a transmission customer</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="TransmissionProfileList">
  <xsd:annotation>
    <xsd:documentation>Collection of transmission
profiles</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="TransmissionProfile"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="TPCode" type="TaggingEntityIDDT">
  <xsd:annotation>
    <xsd:documentation>Unique ID per the NERC registry that
represents a particular transmission Provider</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Value" nillable="true">
  <xsd:annotation>
    <xsd:documentation>generic container for miscellaneous
data</xsd:documentation>
  </xsd:annotation>
  <xsd:simpleType>
    <xsd:restriction base="xsd:string">
      <xsd:maxLength value="128"/>
    </xsd:restriction>
  </xsd:simpleType>

```

```

</xsd:element>
<xsd:element name="Transmission">
  <xsd:annotation>
    <xsd:documentation>Collection of information describing a
transmission provider's physical role in a transaction</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="TPCode"/>
      <xsd:element ref="POR"/>
      <xsd:element ref="POD"/>
      <xsd:element ref="TransmissionProfileList"/>
      <xsd:element ref="SchedulingEntityList" minOccurs="0"/>
      <xsd:element ref="MiscInfoList" minOccurs="0"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DistributePotentialTLRProfileChangeResponse">
  <xsd:annotation>
    <xsd:documentation>Method Response</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element
ref="DistributePotentialTLRProfileChangeReturn"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="ContractNumberList">
  <xsd:annotation>
    <xsd:documentation>Collection of Contract
Numbers</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ContractNumber"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="WithdrawRequest">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MessageInfo"/>
      <xsd:element ref="ContactInfo" minOccurs="0"/>
      <xsd:element ref="TagID"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

                <xsd:element ref="RequestRef"/>
                <xsd:element ref="Notes" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="WithdrawRequestResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="WithdrawRequestReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="WithdrawRequestReturn">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="RequestTerminateTag">
        <xsd:annotation>
            <xsd:documentation>Method Call to Terminate an
IMPLEMENTED transaction</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="ContactInfo" minOccurs="0"/>
                <xsd:element ref="TagID"/>
                <xsd:element ref="AbsoluteStart"/>
                <xsd:element ref="Notes" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="RequestTerminateTagResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="RequestTerminateTagReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

```

```

</xsd:element>
<xsd:element name="RequestTerminateTagReturn">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ReturnStatus"/>
      <xsd:element ref="RequestID" minOccurs="0"/>
      <xsd:element ref="TimeClassification"/>
      <xsd:element ref="ActOnByTime"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="ApprovalRights" type="xsd:boolean">
  <xsd:annotation>
    <xsd:documentation>Flag used to indicate whether or not an entity
is expected to take approval action upon a request or not</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Error">
  <xsd:annotation>
    <xsd:documentation>Collection of information describing an
error</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="ErrorNumberRef"/>
      <xsd:element ref="ErrorMessage"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="ErrorNumberRef" type="ErrorNumberRefDT">
  <xsd:annotation>
    <xsd:documentation>Reference to a NERC-registered
error</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ReturnTimeStamp" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Date time a response was
generated</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="StartDateTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Specific point in time representing the
beginning of a duration</xsd:documentation>
  </xsd:annotation>

```

```

</xsd:element>
<xsd:element name="StopDateTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Specific point in time representing the end of
a duration</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="TransmissionAllocationID" type="xsd:integer">
  <xsd:annotation>
    <xsd:documentation>Unique identifier for a transmission
allocation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="CorrectionList">
  <xsd:annotation>
    <xsd:documentation>A collection of
corrections</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="Correction" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="TLREventRef" type="TLREventIDDT">
  <xsd:annotation>
    <xsd:documentation>Reverence to a TLR
Event</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="RequestProfileChange">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="MessageInfo"/>
      <xsd:element ref="TagID"/>
      <xsd:element ref="ContactInfo" minOccurs="0"/>
      <xsd:element ref="Notes" minOccurs="0"/>
      <xsd:element ref="MiscInfoList" minOccurs="0"/>
      <xsd:choice>
        <xsd:element ref="MarketProfileChange"/>
        <xsd:element ref="ReliabilityProfileChange"/>
      </xsd:choice>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackHistory">

```

```

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="History"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackHistoryResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="CallbackHistoryReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackHistoryReturn">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryRequestIDs">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="TagID"/>
                <xsd:element ref="RequestStatus" minOccurs="0"
maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryRequestIDsResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="QueryRequestIDsReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryRequestIDsReturn">
        <xsd:complexType>

```

```

        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
            <xsd:element ref="RequestIDSummaryList"
minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RequestIDSummaryList">
    <xsd:annotation>
        <xsd:documentation>Collection of request ID
Summaries</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RequestIDSummary"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RequestIDSummary">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing a
request ID and its associated status</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RequestID"/>
            <xsd:element ref="RequestStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RequestStatus" type="RequestStatusDT">
    <xsd:annotation>
        <xsd:documentation>Status of an outstanding
request</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="CompositeState" type="CompositeStateDT">
    <xsd:annotation>
        <xsd:documentation>Overall Status of an e-
Tag</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ActiveRange">
    <xsd:annotation>

```

```

        <xsd:documentation>A range in time within which a query or
action should apply</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="StartDateTime"/>
            <xsd:element ref="StopDateTime"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="LastModifiedRange">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing a range
of time during which a transaction was last modified</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="StartDateTime"/>
            <xsd:element ref="StopDateTime"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CurrentRequestCount" type="xsd:integer">
    <xsd:annotation>
        <xsd:documentation>The request count indicating the number of
requests made against the transaction</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="RequestProfileChangeResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RequestProfileChangeReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="RequestProfileChangeReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
            <xsd:element ref="RequestID" minOccurs="0"/>
            <xsd:element ref="TimeClassification"/>
            <xsd:element ref="ActOnByTime"/>
        </xsd:sequence>
    </xsd:complexType>

```

```

        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackSummaries">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:choice>
                    <xsd:element ref="TagSummaryList"/>
                    <xsd:element ref="Empty"/>
                </xsd:choice>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackSummariesResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="CallbackSummariesReturn"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackSummariesReturn">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnStatus"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryTags">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
                <xsd:element ref="TagCredentialList"/>
                <xsd:element ref="ReturnRate"/>
                <xsd:element ref="CallbackTarget" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="QueryTagsResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>

```

```

        <xsd:element ref="QueryTagsReturn"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="QueryTagsReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackTags">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:choice>
                <xsd:element ref="TagList"/>
                <xsd:element ref="Empty"/>
            </xsd:choice>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackTagsResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="CallbackTagsReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackTagsReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagCredentialList">
    <xsd:annotation>
        <xsd:documentation>Collection of Tag
Credentials</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>

```

```

        <xsd:element ref="TagCredential"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="TagCredential">
    <xsd:annotation>
        <xsd:documentation>Collection of data that describes tag
identification and access </xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TagID"/>
            <xsd:element ref="SecurityKey"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TagList">
    <xsd:annotation>
        <xsd:documentation>Collection of Tags</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Tag" maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Tag">
    <xsd:annotation>
        <xsd:documentation>Collection of data that represents a complete
transaction document.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TagID"/>
            <xsd:element ref="CorrectionID"/>
            <xsd:element ref="TagData"/>
            <xsd:element ref="ContactInfo"/>
            <xsd:element ref="TestFlag"/>
            <xsd:element ref="TransactionType"/>
            <xsd:element ref="Notes"/>
            <xsd:element ref="CompositeState" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ReturnRate" type="xsd:integer">

```

```

        <xsd:annotation>
            <xsd:documentation>Value indicating the number of payload
chunks to be sent back to an entity in response to a query</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="TagCode">
        <xsd:annotation>
            <xsd:documentation>String used to identify a
transaction.</xsd:documentation>
        </xsd:annotation>
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:maxLength value="7"/>
                <xsd:minLength value="7"/>
                <xsd:pattern value="[0-9A-Z]{7}"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:element>
    <xsd:element name="ReturnStatus">
        <xsd:annotation>
            <xsd:documentation>Container of information used to describe the
results of a method call</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ReturnTimeStamp"/>
                <xsd:element ref="ReturnValue"/>
                <xsd:element ref="ErrorList" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackPotentialTLRProfileChange">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MessageInfo"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="CallbackPotentialTLRProfileChangeResponse">
        <xsd:annotation>
            <xsd:documentation>Method Response</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element
ref="CallbackPotentialTLRProfileChangeReturn"/>

```

```

        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackPotentialTLRProfileChangeReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="MessageInfo"/>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Contact">
    <xsd:annotation>
        <xsd:documentation>Name of a contact</xsd:documentation>
    </xsd:annotation>
    <xsd:simpleType>
        <xsd:restriction base="xsd:string">
            <xsd:maxLength value="50"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:element>
<xsd:element name="SCCode" type="TaggingEntityIDDT">
    <xsd:annotation>
        <xsd:documentation>NERC registered ID for a security
coordinator</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="Impact" type="xsd:boolean">
    <xsd:annotation>
        <xsd:documentation>Boolean flag used to indicate whether a
correction impacts a particular entity or not</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="Range">
    <xsd:annotation>
        <xsd:documentation>Information describing a time duration using
absolute references to the start and stop</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="ActiveRange"/>
            <xsd:element ref="LastModifiedRange"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Action">

```

```

        <xsd:annotation>
            <xsd:documentation>Method Calls and Responses that may be
returned in response to a QueryHistory request; subset of all valid method Calls and
Responses.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:choice>
                <xsd:sequence>
                    <xsd:element ref="DistributeCorrection"/>
                    <xsd:element ref="DistributeCorrectionResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="DistributeNewTag"/>
                    <xsd:element ref="DistributeNewTagResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="DistributeResolution"/>
                    <xsd:element ref="DistributeResolutionResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="DistributeProfileChange"/>
                    <xsd:element
ref="DistributeProfileChangeResponse" minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="DistributeStatus"/>
                    <xsd:element ref="DistributeStatusResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="RequestCorrection"/>
                    <xsd:element ref="RequestCorrectionResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="RequestNewTag"/>
                    <xsd:element ref="RequestNewTagResponse"
minOccurs="0"/>
                </xsd:sequence>
                <xsd:sequence>
                    <xsd:element ref="RequestProfileChange"/>
                    <xsd:element ref="RequestProfileChangeResponse"
minOccurs="0"/>
                </xsd:sequence>
            </xsd:choice>
        </xsd:complexType>
    </xsd:annotation>

```

```

        </xsd:sequence>
        <xsd:sequence>
            <xsd:element ref="RequestTerminateTag"/>
            <xsd:element ref="RequestTerminateTagResponse"
minOccurs="0"/>
        </xsd:sequence>
        <xsd:sequence>
            <xsd:element ref="SetState"/>
            <xsd:element ref="SetStateResponse"
minOccurs="0"/>
        </xsd:sequence>
        <xsd:sequence>
            <xsd:element ref="WithdrawRequest"/>
            <xsd:element ref="WithdrawRequestResponse"
minOccurs="0"/>
        </xsd:sequence>
        <xsd:sequence>
            <xsd:element ref="DistributeTerminateTag"/>
            <xsd:element
ref="DistributeTerminateTagResponse" minOccurs="0"/>
        </xsd:sequence>
    </xsd:choice>
</xsd:complexType>
</xsd:element>
<xsd:element name="ContactInfo">
    <xsd:annotation>
        <xsd:documentation>Collection of information describing a
contact</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Contact"/>
            <xsd:element ref="Phone" minOccurs="0"/>
            <xsd:element ref="Fax" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TestFlag" type="xsd:boolean">
    <xsd:annotation>
        <xsd:documentation>Flag used to identify that a transaction is a
"test" transaction</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="MarketSegmentRef" type="MarketSegmentIDDT">
    <xsd:annotation>

```

```

                <xsd:documentation>Reference to a Market
Segment</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="RequestRef" type="RequestIDDT">
                <xsd:annotation>
                    <xsd:documentation>Reference to a Request
ID</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="TransactionType" type="TransactionTypeDT">
                <xsd:annotation>
                    <xsd:documentation>Specific Transaction Type of the
transaction</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="LimitClearing">
                <xsd:annotation>
                    <xsd:documentation>Indicator that reliability limit should be
removed if present.</xsd:documentation>
                </xsd:annotation>
            </xsd:complexType/>
        </xsd:element>
        <xsd:element name="AbsoluteBlock">
            <xsd:annotation>
                <xsd:documentation>A collection of data describing a schedule
block; specified through the use of absolute starts and stops combined with a megawatt
level.</xsd:documentation>
            </xsd:annotation>
            <xsd:complexType>
                <xsd:sequence>
                    <xsd:element ref="AbsoluteStart"/>
                    <xsd:choice>
                        <xsd:element ref="MWLevel"/>
                        <xsd:element ref="LimitClearing"/>
                    </xsd:choice>
                    <xsd:element ref="AbsoluteStop"/>
                </xsd:sequence>
            </xsd:complexType>
        </xsd:element>
        <xsd:element name="AbsoluteBlockList">
            <xsd:annotation>
                <xsd:documentation>A collection of Absolute
Blocks</xsd:documentation>
            </xsd:annotation>
            <xsd:complexType>

```

```

        <xsd:sequence>
            <xsd:element ref="AbsoluteBlock"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="AbsoluteProfile">
    <xsd:annotation>
        <xsd:documentation>A collection of data describing energy blocks
and the type of energy they represent</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="AbsoluteBlockList"/>
            <xsd:element ref="ProfileTypeList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="AbsoluteProfileList">
    <xsd:annotation>
        <xsd:documentation>A collection of Absolute
Profiles</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="AbsoluteProfile"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MWLevel" type="xsd:integer">
    <xsd:annotation>
        <xsd:documentation>Level of generation, consumption, or use, as
measured in MW</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ProfileTypeList">
    <xsd:annotation>
        <xsd:documentation>Collection of profile
types</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ProfileType"
maxOccurs="unbounded"/>
        </xsd:sequence>

```

```

        </xsd:complexType>
    </xsd:element>
    <xsd:element name="ProfileType" type="ProfileTypeDT">
        <xsd:annotation>
            <xsd:documentation>Identifier describing the type of profile a
collection of data represents</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="LossAccountingList">
        <xsd:annotation>
            <xsd:documentation>Collection of LossAccounting
items.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="LossAccounting"
maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="LossAccounting">
        <xsd:annotation>
            <xsd:documentation>Collection of information describing the
manner in which losses will be accounted for with regards to a particular physical
segment</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="PhysicalSegmentRef"/>
                <xsd:element ref="LossMethodEntryList"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="LossMethodEntry">
        <xsd:annotation>
            <xsd:documentation>A collection of data describing the manner in
which losses are to be accounted for for a specific period of time</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="StartDateTime"/>
                <xsd:element ref="StopDateTime"/>
                <xsd:element ref="RequestRef"/>
                <xsd:choice>
                    <xsd:element ref="InKind"/>
                    <xsd:element ref="Financial"/>
                </xsd:choice>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

```

```

                <xsd:element ref="Internal"/>
                <xsd:element ref="External"/>
            </xsd:choice>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="InKind">
    <xsd:annotation>
        <xsd:documentation>Loss Type indicating that losses are being
scheduled and provided within the same transaction through physical means (i.e., 108 -
106 -104 - 102 - 100 values along the path)</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType/>
</xsd:element>
<xsd:element name="Financial">
    <xsd:annotation>
        <xsd:documentation>Indicates financial accounting for
losses</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType/>
</xsd:element>
<xsd:element name="Internal">
    <xsd:annotation>
        <xsd:documentation>Loss Type indicating that losses will be
provided through a transaction within the TPs control area.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="ContractNumberList"/>
            <xsd:element ref="TagIDList"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="External">
    <xsd:annotation>
        <xsd:documentation>Container for External loss supply
information</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="TagIDList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="LossMethodEntryList">
    <xsd:annotation>

```

```

                <xsd:documentation>A collection of loss method
entries</xsd:documentation>
                </xsd:annotation>
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element ref="LossMethodEntry"
maxOccurs="unbounded"/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
            <xsd:element name="TagIDList">
                <xsd:annotation>
                    <xsd:documentation>Collection of Tag IDs</xsd:documentation>
                </xsd:annotation>
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element ref="TagID" maxOccurs="unbounded"/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
            <xsd:element name="EnergyProductRef" type="ProductIDDT">
                <xsd:annotation>
                    <xsd:documentation>Reference to a NERC registered Energy
Product</xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="TransmissionAllocationException">
                <xsd:annotation>
                    <xsd:documentation>An exception to a previously specified
transmission allocation</xsd:documentation>
                </xsd:annotation>
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element ref="TransmissionAllocationID"/>
                        <xsd:element ref="AllocationExceptionProfile"/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
            <xsd:element name="TransmissionAllocationChangeList">
                <xsd:annotation>
                    <xsd:documentation>Collection of transmission allocation
changes</xsd:documentation>
                </xsd:annotation>
                <xsd:complexType>
                    <xsd:sequence>

```

```

        <xsd:element ref="TransmissionAllocationChange"
maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="TransmissionAllocationChange">
    <xsd:annotation>
        <xsd:documentation>Modification to a transmission
allocation</xsd:documentation>
    </xsd:annotation>
</xsd:complexType>
<xsd:choice>
    <xsd:element ref="BaseTransmissionAllocation"/>
    <xsd:element ref="TransmissionAllocationException"/>
</xsd:choice>
</xsd:complexType>
</xsd:element>
<xsd:element name="BaseTransmissionAllocation">
    <xsd:annotation>
        <xsd:documentation>A collection of information used to describe
the manner in which transmission resources are allocated to a
transaction</xsd:documentation>
    </xsd:annotation>
</xsd:complexType>
<xsd:sequence>
    <xsd:element ref="TransmissionAllocationID"/>
    <xsd:element ref="ParentSegmentRef"/>
    <xsd:element ref="TransProductRef"/>
    <xsd:element ref="ContractNumber"/>
    <xsd:element ref="TransmissionCustomerCode"/>
    <xsd:element ref="AllocationBaseProfile"/>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GCACode" type="TaggingEntityIDDT">
    <xsd:annotation>
        <xsd:documentation>NERC ID for the control area in which the
source for the transaction is located</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="LCACode" type="TaggingEntityIDDT">
    <xsd:annotation>
        <xsd:documentation>Acronym for the CA in which the Load is
located</xsd:documentation>
    </xsd:annotation>
</xsd:element>

```

```

<xsd:element name="ParentMarketSegmentRef" type="MarketSegmentIDDT">
  <xsd:annotation>
    <xsd:documentation>Reference to a physical segment's associated
market segment. Cannot be less than the previous physical segment's parent market
segment ref.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="RequestTimeStamp" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Date and time at which a request was
made</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="RelativeAllocationProfileList">
  <xsd:annotation>
    <xsd:documentation>A collection of relative allocation
profiles</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="RelativeAllocationProfile"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="AbsoluteAllocationProfileList">
  <xsd:annotation>
    <xsd:documentation>A collection of
AbsoluteAllocationProfiles</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="AbsoluteAllocationProfile"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="RelativeAllocationProfile">
  <xsd:annotation>
    <xsd:documentation>A transmission allocation profile describe in
relative terms</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref="DateTimeList"/>
      <xsd:element ref="RelativeBlockList"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="AbsoluteAllocationProfile">
    <xsd:annotation>
        <xsd:documentation>A collection of data describing a
Transmission Allocation in absolute (date/time specific) terms.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="AbsoluteBlockList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="AllocationBaseProfile">
    <xsd:annotation>
        <xsd:documentation>A collection of data describing the initial
profile associated with a Transmission Allocation</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="RelativeAllocationProfileList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="AllocationExceptionProfile">
    <xsd:annotation>
        <xsd:documentation>A collection of information describing
changes to the base profile of a transmission allocation</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="AbsoluteAllocationProfileList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="MarketProfileChange">
    <xsd:annotation>
        <xsd:documentation>Container for description of Market-based
profile change.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ExceptionList" minOccurs="0"/>
            <xsd:element ref="TransmissionAllocationChangeList"
minOccurs="0"/>

```

```

        <xsd:element ref="LossAccountingChangeList"
minOccurs="0"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ReliabilityProfileChange">
    <xsd:annotation>
        <xsd:documentation>Container for description of Reliability-based
profile change.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="ExceptionList"/>
            <xsd:element ref="ReliabilityLimitClearing"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ReliabilityLimitClearing">
    <xsd:annotation>
        <xsd:documentation>Used to specify a range of time from which
all Reliability Limits should be removed</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ActiveRange"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ExceptionList">
    <xsd:annotation>
        <xsd:documentation>Collection of
Exceptions</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Exception" maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Exception">
    <xsd:annotation>
        <xsd:documentation>Variance from normal
profile</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>

```

```

        <xsd:element ref="ProfileRef"/>
        <xsd:element ref="AbsoluteProfileList"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ResourceCorrection">
    <xsd:annotation>
        <xsd:documentation>Correction of data specifically related to a
Generator or Load</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ContractNumberList" minOccurs="0"/>
            <xsd:element ref="MiscInfoList" minOccurs="0"/>
            <xsd:element ref="ContactInfo" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="TransmissionCorrection">
    <xsd:annotation>
        <xsd:documentation>A correction to a transmission
segment</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="POR"/>
            <xsd:element ref="POD"/>
            <xsd:element ref="TransmissionProfileList"/>
            <xsd:element ref="SchedulingEntityList" minOccurs="0"/>
            <xsd:element ref="MiscInfoList" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="PhysicalSegmentCorrection">
    <xsd:annotation>
        <xsd:documentation>A correction to be applied to a specific
physical segment</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="PhysicalSegmentID"/>
            <xsd:choice>
                <xsd:element ref="ResourceCorrection"/>
                <xsd:element ref="TransmissionCorrection"/>
            </xsd:choice>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

```

```

        </xsd:complexType>
    </xsd:element>
    <xsd:element name="MarketCorrection">
        <xsd:annotation>
            <xsd:documentation>Correction to a market
segment</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="EnergyProductRef" minOccurs="0"/>
                <xsd:element ref="ContractNumberList" minOccurs="0"/>
                <xsd:element ref="MiscInfoList" minOccurs="0"/>
                <xsd:element ref="ContactInfo" minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="MarketSegmentCorrection">
        <xsd:annotation>
            <xsd:documentation>Market Correction as related to a specific
market segment</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="MarketSegmentID"/>
                <xsd:element ref="MarketCorrection"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="TransmissionAllocationCorrection">
        <xsd:annotation>
            <xsd:documentation>A correction to specific transmissison
allocation information</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="TransmissionAllocationID"/>
                <xsd:element ref="ParentSegmentRef"/>
                <xsd:element ref="TransProductRef"/>
                <xsd:element ref="ContractNumber"/>
                <xsd:element ref="TransmissionCustomerCode"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="LossAccountingCorrection">
        <xsd:annotation>

```

```

        <xsd:documentation>A correction to the loss accounting portions
of a transaction</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="PhysicalSegmentID"/>
            <xsd:element ref="LossMethodCorrectionList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="LossMethodCorrection">
    <xsd:annotation>
        <xsd:documentation>A correction to a loss provision
method</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="StartDateTime"/>
            <xsd:element ref="StopDateTime"/>
            <xsd:element ref="RequestRef"/>
            <xsd:choice>
                <xsd:element ref="InKind"/>
                <xsd:element ref="Financial"/>
                <xsd:element ref="Internal"/>
                <xsd:element ref="External"/>
            </xsd:choice>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="LossAccountingChangeList">
    <xsd:annotation>
        <xsd:documentation>Collection of
LossAccountingChanges</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="LossAccountingChange"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="LossAccountingChange">
    <xsd:annotation>
        <xsd:documentation>Change in Loss Accounting that results in an
exception</xsd:documentation>
    </xsd:annotation>

```

```

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="PhysicalSegmentRef"/>
                <xsd:element ref="LossMethodChangeList"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="LossMethodChangeList">
        <xsd:annotation>
            <xsd:documentation>Collection of Loss Method
Changes</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="LossMethodChange"
maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="LossMethodChange">
        <xsd:annotation>
            <xsd:documentation>Change to create an exception based on loss
provision type change</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="StartDateTime"/>
                <xsd:element ref="StopDateTime"/>
                <xsd:choice>
                    <xsd:element ref="InKind"/>
                    <xsd:element ref="Financial"/>
                    <xsd:element ref="Internal"/>
                    <xsd:element ref="External"/>
                </xsd:choice>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name="ExceptionProfileChangeList">
        <xsd:annotation>
            <xsd:documentation>Collection of Exception Profile
Changes</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="ExceptionProfile"
maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

```

```

        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ExceptionProfileChange">
    <xsd:annotation>
        <xsd:documentation>Specific change creating an
exception</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ProfileID"/>
            <xsd:element ref="AbsoluteProfileList"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="Empty">
    <xsd:complexType/>
</xsd:element>
<xsd:element name="LossMethodCorrectionList">
    <xsd:annotation>
        <xsd:documentation>A collection of Loss Method
Corrections</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="LossMethodCorrection"
maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ResolutionProfile">
    <xsd:annotation>
        <xsd:documentation>Used to indicate the resultant Current Level
profile following request resolution.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:choice>
            <xsd:element ref="BaseProfileList"/>
            <xsd:element ref="ExceptionProfileSet"/>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>
<xsd:element name="QueryAvailability">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="FromEntity"/>

```

```

        <xsd:element ref="ToEntity"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="QueryAvailabilityResponse">
    <xsd:annotation>
        <xsd:documentation>Method Response</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="QueryAvailabilityReturn"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="QueryAvailabilityReturn">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="ReturnStatus"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="ApprovalTimeStamp" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation>DatTime indicating when approval action
was taken.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="Requestor">
    <xsd:annotation>
        <xsd:documentation>Used to identify the initiator of a request.
Should be equal to the "from" entity declared in the original
request.</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="Entity"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="CallbackTarget" type="CallbackTargetDT">
    <xsd:annotation>
        <xsd:documentation>The destination of a callback
message</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:simpleType name="CallbackTargetDT">

```

```
<xsd:annotation>  
  <xsd:documentation>Data type used to specify the destination of a  
callback message</xsd:documentation>  
</xsd:annotation>  
<xsd:restriction base="xsd:string">  
  <xsd:enumeration value="PRIMARY"/>  
  <xsd:enumeration value="SECONDARY"/>  
</xsd:restriction>  
</xsd:simpleType>  
</xsd:schema>
```



**NBSO** New Brunswick System Operator  
**ERNB** Exploitant du réseau du Nouveau-Brunswick

October 2, 2009

North American Energy Standards Board.  
1301 Fannin, Suite 2350  
Houston, Texas  
77002

Attention: Cory Galik Cummings, NAESB Staff Attorney

**Subject: Request for Formal Comments on 2009 WEQ Annual Plan Items 1(a); 3(a)(vii);  
R05020: Version 1.8.1 Electronic Tagging Functional Specification and Schema**

Dear Mr. Cummings,

In response to your email/posting dated September 4, 2009 regarding industry comments to the E-Tagging Specification Version 1.8.1, the New Brunswick System Operator respectfully submits the comments detailed below recommending changes to the aforementioned specification.

The comments that follow are in regard to Section 3.6.1.3:

**Proposal #1**

*The NBSO proposes the loss carry forward be an optional setting. A flag can be set at tag creation indicating if losses should be carried forward during profile changes. This flag could be set by segment or for the entire tag. If the flag is set to False, loss rounding error will not be carried forward.*

*Rationale: There are jurisdictions, like the Maritimes Area, which use other methods to account for loss rounding error that conflict with the method described in section 3.6.1.3.*

**Proposal #2**

*The NBSO proposes the specification be changed to allow a loss percentage to be set for transmission sections that use in-kind losses. When available this would replace the calculation labelled Loss Percentage Step.*

*Rationale: This is a more accurate and consistent way to account for transmission losses compared to the current method of:  $(TotalDailyMWhPOR - TotalDailyMWhPOD) / TotalDailyMWhPOR$ .*

*Below is an example demonstrating the rationale of proposal # 2:*

*In-kind system losses are 3.3%*

*Tag A*

*TotalDailyMWhPOR = 100*

*TotalDailyMWhPOD = 97*

*Tag A Calculated Losses = (100 - 97) / 100 = 3.0 %*

*Tag B*

*TotalDailyMWhPOR = 50*

*TotalDailyMWhPOD = 48*

*Tag B Calculated Losses = (50- 48) / 50 = 4.0%*

*As a result the calculated loss percentage varies significantly from the actual value.*

The New Brunswick System Operator (NBSO) located in Fredericton, New Brunswick, Canada is an independent system operator whose primary responsibilities are to ensure the reliability of the electrical system and to facilitate the development and operation of a competitive electricity market in New Brunswick. The NBSO is the Reliability Coordinator for the Maritimes Area and the Balancing Authority /Transmission Operator in the New Brunswick Balancing Area.

Please contact me with any questions comment.

## **NEW BRUNSWICK SYSTEM OPERATOR**

Dean Landers  
Manager, Operations Services and Settlement  
Power System Operations

cc: T. Vandervort, NERC  
E. Sears, NBSO

Comments Submitted by S. Ashbaker, WECC

---

From: Ashbaker, Steve  
Sent: Monday, October 05, 2009 10:47 AM  
To: Galik, Cory  
Cc: Ashbaker, Steve; Rice, Paul; Harshbarger, Robert  
Subject: Comments on Version 1.8.1 e-Tag Specifications and Schema

Dear Cory,

This is in response to your September 4, 2009 notice requesting comments on the Version 1.8.1 e-Tag Specifications and Schema.

Attached is a red line copy of the Version 1.8.1 E-Tag Specifications with our comments and suggested modifications. As we understand the new functionality, it is proposed that the Tag Authority forward all e-Tag messages to a Secondary Service URL of the Tag Approval and Agent Services. It is also our understanding that the costs to implement this functionality will rest exclusively with the Tag Authorities, while only the Tag Approval and Agent Services will gain benefit from it. Since WECC is the holder of the Interchange Authority Contract, we would assume the financial responsibility for making these changes. It appears the changes are at the request of the Approval Service and would seem the financial responsibility for the changes should fall back to the Approval Service and the Authority Service. If you should have any questions, please feel free to contact me.

Thanks

Steven D Ashbaker  
Director of Operations  
Western Electricity Coordinating Council

**Comments Submitted by S. Ashbaker, WECC**

# **Electronic Tagging Functional Specification**

**Version 1.8.1**

NOT YET APPROVED FOR IMPLEMENTATION

**September 2, 2009**

**Joint Electric Scheduling Subcommittee**

**North American Energy Standards Board – Wholesale Electric  
Quadrant**

## Comments Submitted by S. Ashbaker, WECC

Electronic Tagging - Functional Specifications  
September 2, 2009

Version 1.8.1

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# Section 1 - Functional Description

## 1.1 Introduction

### 1.1.1 Purpose

This document describes the functional requirements and detailed technical specifications for the implementation of an electronic Transaction Information System (TIS), currently implemented as Electronic Tagging or e-Tag. These requirements and specifications provide a basis for tools designed to facilitate identification and communication of interchange transaction information (e-Tags) between parties in accordance with NERC Reliability Standards and NAESB Wholesale Electric Quadrant Business Practice Standards.

### 1.1.2 E-Tag Related References

Information related to the JESS (formerly JISWG) can be found at  
[http://www.naesb.org/weq/weq\\_jess.asp](http://www.naesb.org/weq/weq_jess.asp)

The most recent copy of the e-Tag 1.8.1 XML Schema can be found at  
<http://reg.tsin.com/Tagging/e-Tag/>

For detailed information regarding NAESB Standards, please see  
<http://www.naesb.org/>

For detailed information regarding NERC Standards, please see  
<http://www.nerc.com/>

The Hypertext Transport Protocol version 1.1 is described by W3C RFC 2616 and can be obtained at  
<http://www.w3.org/Protocols/HTTP/1.1/rfc2616.txt.gz>

The XML Schema Protocol is defined by the W3C and can be downloaded from  
<http://www.w3.org/2000/10/XMLSchema>

The Simple Method eXchange Protocol (SMXP) was defined by the OASIS Standards Collaborative and can be found at:  
<http://reg.tsin.com/Tagging/e-tag/>

## Comments Submitted by S. Ashbaker, WECC

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### 1.1.3 Change Log

Version	Change
1.7096	Accepted all changes in 1.7095 posted document
	Replaced NERC policy references with NERC/NAESB Standards references
	Incorporated Functional Model language
	Added Change Log
	Updated other references and URLs
	Market Re-dispatch (MRD) language and function removed
1.7.097	Removed Passive Approval by Reliability Entities
	Extend e-Tag creation to 48 hours into the past
	Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags
	Remove 24 hour limit on Reliability Adjustments
	Remove Counter Party Reports
	Remove references to MRD
	Add Optional Approval Rights for any PSE cited in the transmission allocation
	Replaced various state diagrams with descriptive wording
	Strike automatic approval of cancellations
1.8	Remove Background section
	Add reference to default ramp rate definitions
	Add new final states and their definitions
	Add Rounding definition
	Add Ramp Duration validation
	Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)
	Modify in-kind loss calculations
	Define which Functional Model entities can be Scheduling Entities (BA)
	Strike Appendix A
	Strike erroneous current level warning
	Carbon Copy list (no approval, sent copies of e-Tag)
	Calculation of ActOnByTime and ImplementTime
	Addition of TimeClassification (Late, OnTime, ATF)
	NERC web site changed to Electric Industry Registry web site
	Added RequestTerminateTag and related handling
	Simplify Recovery function
	Allow ATF e-Tags to be Terminated
	Allow Source or Sink to modify DYNAMIC e-Tag with actual data
	Transmission Allocation must be $\geq$ energy profile.
	Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority Services
	Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard
	Extend e-Tag creation to 168 hours into the past

## Comments Submitted by S. Ashbaker, WECC

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	Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags
	Current Level no longer distributed (calculated based on approved requests in request order)
	Change Tag Agent, Tag Approval, Tag Authority Services to Agent, Approval, Authority Services
	Change Tag to e-Tag
	Add Pseudo Tie tag type.
	Add functionality to allow Transmission Service Provider to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm in sections <a href="#">3.6.1.3</a> , <a href="#">4.6.1.1</a> , and <a href="#">4.6.1.2</a>
	Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.
1.8.1	Modified CANCELLED definition
	Added statement regarding specification/schema relationship in section 1.4
	Modified sections 1.2, 1.4.1.2, 1.4.9.2, 2.7, 3.6.1.1.1, and 4.7 regarding Secondary Service URLs
	Modified section 1.4.9.4 to clarify the Authority Service archive requirements
	Made changes to sections 1.6.5.1, 2.6.5.2.1, 3.6.5.2.1, and 4.6.5.2.1 to support a 25 hour day
	Added language addressing profile start times and durations in section 2.6.1.1, 3.6.1.1,
	Clarified that entities may not be added or removed in profile change requests in section 2.6.1.3, 3.6.1.3, and 4.6.1.2 and deleted text in 3.6.2.2
	Removed the requirement to include a reason when withdrawing a request in section 2.6.3.2, 3.6.3.2, and 4.6.3.2
	Minor wording correction in 3.4
	Removed a validation item in section 3.6.3.1
	Corrected the spelling of Authority Service Operator in several places and added to definitions
	Added requirement for Authority Service to set ActOnByTime and TimeClassification in section 3.6.3.2 and in 3.6.3.3
	Added requirement for asynchronous response in section 3.6.5.2
	Deleted bullet item from section 4.6.3.1
	Revised references to PKI in section 7.1.1
	Agent, Approval, Authority, and RAS references changed to Agent Service, Approval Service, Authority Service, and RA Service for clarity.
	TSP changed throughout to Transmission Service Provider for clarity
	Created Appendix A – Special Interconnection Implementation Requirements
	Modified 1.4.2.2 and 3.6.1.1.1 definition of duplicate row for the distribution list and modified the distribution list record example
	Added definition of Tagging Entity ID

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	Modified 1.4.6 and 2.6.1.3 to clarify that e-Tag authors may adjust DYNAMIC type e-Tags after the fact (after the current scheduling period) in order to reflect metered values. This included language requiring the clearing of any previously existing reliability limits.
	Added Section 8 – Implementation Requirements
	Modified section 3.7 – added language from NAESB WEQ-004 regarding Authority Service implementation and performance
	Added Acronym column to Definitions Table in section 1.2
	Updated links in section 1.1.2
	Modified 1.4.6, 2.6.1.3, and 3.6.1.3 to clarify that e-Tag authors may not the Transmission Allocation profile for DYNAMIC type e-Tags after the fact (after the current scheduling period).
	Modified 3.6.1.3 to allow loss profile adjustments in a DYNAMIC type e-Tag ATF adjustment request.
	Eliminated “spare” column in change table

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### 1.2 Definitions

Term	Acronym	Definition
{ Source BA, Sink BA, PSE } Code		Entity Code defined in the Electric Industry Registry
ACTIVE		An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.
Active Approval		An approval or denial that occurred through an entity's deliberate indication of their intent.
After-the-Fact	ATF	A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.
Approval Entity		Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.
Approval Rights		The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.
Approval State		The State communicating an Approval Entity's willingness to implement a particular Request.
Approval State Type		A description of the manner in which an Approval Entity's State was set.
APPROVED		Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, Transmission Service Provider, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.
Arranged Interchange		The state where the Interchange Authority has received the Interchange information (initial or revised).
Asynchronous		A two-part communication, involving a request message followed by a separate response message.

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Author Rights		The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.
Authority Service Operator		Responsible for Authority Service report generation and retention and to respond to requests for override - typically the Sink Balancing Authority.
Balancing Authority	BA	The responsible entity that ingrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
Balancing Authority Area	BAA	The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
Base Profile		The profile associated with the new e-Tag, as originally requested.
Block Start Time		Represents the start time within a request. For RequestNewTag it is the Tag Start Time
CANCELLED		Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Composite State of the e-Tag changes from CONFIRMED to CANCELLED as soon as the Request becomes APPROVED. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.
Carbon Copy List	CC	An optional list of entities (BA, Transmission Service Provider, or PSE) specified in an e-Tag that are provided with a copy of the e-Tag
COMMFAIL		A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.
Composite State		This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.

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CONFIRMED		The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.
Coordinated Universal Time	UTC	Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).
Correction		A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.
Current Level		<p>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</p> <p>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances (In-Kind losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</p>
DC Tie		A DC transmission facility; specifically, one that provides a connection between two different interconnections.
DC Tie Operator		An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.
DELIVERED		Delivery State indicating that a particular Request was distributed to and received by a party.
Delivery State		A value used to provide information about a party's receipt of a particular Request.

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DENIED		Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.
Electric Industry Registry	EIR	Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.
e-Tag		Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.
e-Tag Agent Service		Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority Service and to receive State information for these requests.
e-Tag Approval Service		Software component used to indicate individual Approval Entity responses when requested by Authority Service, as well as submit Profile changes.
e-Tag Authority Service		Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession
e-Tag Code		Unique 7 character transaction identifier used as part of the Tag ID.
Exception Profile		A profile containing time specific changes to original profile values
Exchange		Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.
EXPIRED		Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.
Financial Path		Path defining the financially responsible parties of a transaction, detailing ownership of energy across physical movement of energy as well as purely financial.

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Generation Providing Entity	GPE	Merchant selling energy from owned, affiliated, or contractually bound generation.
Implement		Allow energy to be scheduled as described.
IMPLEMENTED		The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.
In-Kind Losses		Transmission losses delivered coincident with energy delivery.
Individual Delivery States		The Delivery State associated with a specific party to the e-Tag.
Interchange Distribution Calculator	IDC	The mechanism used by Reliability Coordinators in the Eastern interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the distribution Factors for the Eastern Interconnection.
Interchange Transaction		An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. A strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, <b>any</b> such flow between a source and a sink point shall be considered an Interchange Transaction.
INVALID		Delivery state indicating that a party received a request distribution, but felt it was not syntactically or semantically correct
Late		A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards
Load Serving Entity	LSE	Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.
Market Entity		PSE, GPE, LSE, or TPSE
Market Level		Desired energy profile for the transaction; level of market-desired flow.
Market Operator		An entity responsible for the implementation of an organized market recognized the FERC.

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Maximum Reservation Capacity		The commitment of transmission resources to support a particular transaction; typically the same as actual flow.
Minute Boundary		Date/time value where “seconds” are zero.
NA		Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.
NERC/NAESB Standards		NAESB Wholesale Electric Quadrant Business Practice Standards and NERC Reliability Standards for the Bulk Electric Systems of North America
New e-Tag Request		The initial submittal of Request for Interchange (RFI) to the e-Tag Authority Service
On-time		A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards
OVERRIDE		Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.
PASSIVE		Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.
Passive Approval		An approval that occurred through the expiration of a Request’s evaluation window without an active approval; set automatically by the Authority Service when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).
Passive Denial		A denial that occurred through the expiration of a Request’s evaluation window without an active approval or denial; set automatically by the Authority Service when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and Transmission Service Provider.
PENDING		Initial Request State and Approval State.
Physical Path		The source to sink route (via intermediate transmission paths) between generation and load.
Profile		A time/level matrix that defines an energy flow or other related information.

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Purchasing-Selling Entity	PSE	The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities,
QUEUED		Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.
Ramp Start Time		The time determined using the Tag Start Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Ramp Stop Time		The time determined using the Tag Stop Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Reliability Authority Service	RA Service	Service used to collect transaction information for analysis, particularly with regard to system security.
Reliability Coordinator	RC	The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.
Reliability Entity		BA, RC, SE, or Transmission Service Provider
Reliability Level		Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.
Request		An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.
Request For Interchange	RFI	A collection of required data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing authority. For the purposes of this document, an RFI documents the deemed electrical flow between a source point and a sink point.

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Request State		The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.
Scheduling Entity	SE	The NERC glossary defines an SE as an entity responsible for approving and implementing Interchange Schedule. For purposes of this document, a Scheduling Entity is referenced in the e-Tag Data Model as the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.
Secondary Service URL		<del>A single URL registered in conjunction with an entity's Service URL for a secondary agent or approval service. This secondary service receives a copy of all e-Tag request messages sent by an Authority Service to the Service URL and any callback messages in which the secondary service was identified in the query as the target. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the "Forwarding URL" field is used for this purpose.</del> A single URL registered in conjunction with an Agent or Approval Service URL for a secondary Agent or Approval Service. This secondary service receives a copy of all e-Tag request messages from the Service URL, sent by an Authority Service to the Service URL. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for E-Tag Version 1.8.1, the "Forwarding URL" field is used for this purpose.
Security Key		A security token, used to authenticate an entity involved in the e-Tag messaging system
Service		One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority Services)
Service URL		The main URL registered for an entity's e-Tag service implementation.
Sink		Final point of delivery for a transaction.
Sink Balancing Authority	Sink BA	The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)

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Source		Initial point of supply for a transaction.
Source Balancing Authority	Source BA	The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.).
State		Either the Request State, Composite State, Individual Delivery State, or Approval State.
Straddle Ramp		Ramp that divides the start ramp duration equally across the profile block start or end time.
STUDY		The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.
Synchronous		Message type in which the requesting message is responded to within the same connection.
Tag Author		Entity that creates and submits an e-Tag; the caller of the Request NewTag method.
Tag ID		Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.
Tag Start Time		The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.
Tag Stop Time		The latest time listed in any part of a tag, including energy, transmission, and loss accounting.
Tagging Entity ID		Unique numeric identifier for each tagging entity as defined in the Electric Industry Registry (EIR)

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TERMINATED		Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).
Termination Time		The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.
Test e-Tag		An e-Tag used for diagnostic purposes; does not represent actual transacted business.
Time Classification		Assigned at submittal to each e-Tag request by the Authority Service based on NERC/NAESB standards
Title Transfer		An exchange of energy ownership; may or may not be associated with a physical movement of energy.
Transaction Information System (TIS)		Transaction Information System – currently implemented as e-Tagging.
Transmission Allocation		Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.
Transmission Customer	TC	A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.

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Transmission Service Provider		The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.
Valid		Passed syntax checks by an e-Tag Service (i.e. not invalid)
Viewing Rights		The rights of an entity to view transaction details.
WITHDRAWN		Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

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### 1.3 Tagging Terminology

In an abstract sense, this implementation an electronic Transaction Information System has the primary purpose to create, manipulate, and maintain two objects – e-Tags and Requests. An e-Tag can be thought of as a collection of Requests, bundled together in one package and relating to a single transaction. Requests can be of various types, and each Request contains its own state and approval history. Each approved Request modifies the e-Tag that it is associated with in some way. E-Tags also maintain their own state (called Composite State), independent from the states of the various Requests that make up that e-Tag.

References to “time” in this document mean a specific date/time in most cases; e.g. Ramp Start Time, Ramp Stop Time, Tag Start Time, etc.

The remainder of this section contains a list of useful terms and definitions relating to e-Tags and Requests.

**Request** - New e-Tags and changes to existing e-Tags are all initiated with a Request. An e-Tag is the composite result of all APPROVED Requests related to that e-Tag. There are six types of requests:

**New e-Tag** – a request to implement a new Interchange Transaction as a physical energy flow, also called a Request for Interchange. An e-Tag that reaches an IMPLEMENTED state will usually transition through the following stages:

1. Request for Interchange – the Request created by the e-Tag Author.
2. Arranged Interchange - once the Authority Service receives the Request.
3. Confirmed Interchange - once the Request is approved.
4. Implemented Interchange – when the current time is past the e-Tag’s ramp start time.

**Curtailement** – a request to limit an energy flow through the limiting of an associated Interchange Transaction

**Reload** – a request to release a limit previously requested through a Curtail Request

**Adjustment** – a Request that modifies energy flow and/or transmission capacity of an Interchange Transaction in order that such a change may be implemented and resources committed

**Termination** – a Request that either reduces energy flow and transmission capacity of an e-Tag to zero for the life of the e-Tag prior to its start so that such a transaction is not started (CANCEL) or reduces energy flow and transmission capacity of an e-Tag to zero starting at a time indicated in the termination Request that is after ramp start time and continuing for the life of the transaction (TERMINATION)

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**Extension** – a Request that includes energy flow and/or transmission capacity for unscheduled hours of an Interchange Transaction, in order that such a change may be implemented and resources committed

**Submission time** – the time at which an e-Tag Author submits a Request to the Authority Service for processing. *The submission time is determined by the Authority Service.* Requests are categorized by submission time into one of three Time Classifications based on the timing tables in NERC/NAESB Standards:

1. On-time
2. Late
3. After-the-Fact (ATF)

**Request State** – the overall status of the Request, based on the processing of the Request. Requests are categorized by Request State in the following ways:

**PENDING** - initial Request State

**WITHDRAWN** – final Request State that results when a Request Author submits a WithdrawRequest before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

**APPROVED** – final Request State that results when all entities with approval rights over a Request actively approve it or when no entities with approval rights actively deny the Request, all reliability entities approve the Request, and the Request's assessment period expires.

**DENIED** – final Request State that results when one or more Approval Entities set their Approval State to DENIED and the Request's assessment period expires.

**EXPIRED** – final Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.

**Individual Delivery States** – indicates the successful or unsuccessful transfer of a Request to an entity. The possible Delivery States are:

**QUEUED** – the Request is scheduled for delivery.

**INVALID** – the Request was perceived as invalid by the receiving entity and rejected.

**COMMFAIL** – the Request was undeliverable due to communication problems.

**DELIVERED** – the Request was successfully delivered.

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**Approval States** – indicates the intent of an entity to implement a Request. The possible Approval States are:

**NA** – no state is applicable, as the Request has not yet been successfully delivered to the entity or the entity does not have approval rights.

**PENDING** – no indication has been made to show whether the implementation of the Request is supported or not.

**APPROVED** - an indication of supporting the implementation of the Request.

**DENIED** - an indication of opposing the implementation of the Request.

**STUDY** - an indication that the Approval Entity was uncertain whether or not to support or oppose the Request. This state is treated the same as PENDING when the assessment period ends.

**EXPIRED** – an indication that an Approval Entity who is required to actively set Approval State did not actively set Approval State to APPROVED or DENIED before the assessment period ended.

**Approval State Types** – indicates how an entity's state was assigned. The possible Approval State Types are:

**Active** – an Approval Entity actively selected The Approval State.

**Passive** – the Approval State was passively selected due to a time elapse or other non-interactive manner.

**Overridden** – the Approval State was actively modified by the Sink Balancing Authority via its Authority Service acting on the behalf of an Approval Entity that was unable to act on their own.

**Composite State Types** – indicates the overall state of an e-Tag. The possible Composite States are:

**CONFIRMED** –Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is greater than the current time.

**IMPLEMENTED** – Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is less than or equal to the current time.

**CANCELLED** – Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of

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**CONFIRMED** with the termination time in the Request set to the Tag Start Time of the e-Tag. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.

**TERMINATED** – Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED with the termination time set after the Tag Start Time of the e-Tag. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its Tag Start Time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).

**PENDING** - Initial Composite State

**WITHDRAWN** – The e-Tag Composite State transitions to WITHDRAWN when the new e-Tag creation Request transitions to WITHDRAWN.

**DENIED** – The e-Tag Composite State transitions to DENIED when the new e-Tag creation Request transitions to DENIED.

**EXPIRED** - The e-Tag Composite State transitions to EXPIRED when the new e-Tag creation Request transitions to EXPIRED.

### **1.4 System Concepts**

The functional requirements address the following basic information and data exchange needs:

- Initial creation of an e-Tag Request representing the transaction,
- Dissemination of the e-Tag Request to all parties directly involved in the transaction,
- Collection of Approval States from all parties with approval rights,
- Forwarding of the Request and e-Tag to appropriate entities and tools, and
- Modifications to the e-Tag throughout its lifetime.

This document approaches the functional requirements for electronic tagging by defining four services: the Agent Service, the Authority Service, the Approval Service, and the Reliability Authority Service.

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The functionality that must be supported by each of these services and the entity responsible for providing for these services are defined. There are no restrictions with regard to who may provide these services (i.e., the responsible entity or any one of a number of third-party service providers) nor any restrictions on which services (or all) that a third-party service provider could offer. **Under no circumstances shall a provider of any of these services require any other service provider to implement additional features or functionality beyond these specifications as a condition to properly performing the obligations associated with that service.**

This specification is accompanied by an XML schema. The schema is intended to reflect the specification. Should the specification and schema conflict, the specification is the ruling document.

### 1.4.1 System Architecture

#### 1.4.1.1 Agent Service

The Agent Service provides the ability for initial creation of an e-Tag and the transfer of that information to the appropriate Authority Service. Purchasing-Selling Entities (PSEs) and all other e-Tag Authors are responsible for providing this service directly or by arranging with a third party to provide this service as their agent. E-Tags created by the Agent Service are forwarded to the Authority Service associated with the Sink Balancing Authority (Sink BA). The Agent Service provides a mechanism for the e-Tag Author to view the Approval State of its transactions via an unsolicited notification mechanism. The Agent Service also provides facilities for the e-Tag Author to make Corrections to e-Tags prior to confirmation, as well as request a Profile Changes to any of their e-Tags following confirmation. These corrections and modifications are also sent and processed via the Authority Service.

#### 1.4.1.2 Authority Service

The Authority Service is the focal point for all interactions with an e-Tag and maintains the single authoritative “copy of record” for each e-Tag received. Every Sink Balancing Authority is responsible for registering an URL of an Authority Service. The Authority Service forwards all valid received e-Tag Requests to each entity identified in the transaction as having “approval” or “viewing” rights over that Request (see section 3 for distribution list determination), and collects approvals/denials issued by these Approval Services. Based on time and/or the messages received from the Approval Services, the Authority Service arbitrates and sends the final disposition of the Request to each entity in the distribution list. The Authority Service also provides the capability for both Agent and Approval Services to interrogate the current Approval State of any transaction request on demand.

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### **1.4.1.3 Approval Service**

The Approval Service receives e-Tag Requests submitted by Agent Services via the appropriate Authority Service. The Approval Service also provides a means for an entity to receive notification of transactions in which they are involved, as well as send approve or deny responses to an Authority Service's presentation of a valid Request (if they have approval rights over the Request). Additionally, the Approval Service allows entities to curtail or otherwise modify the profile of an existing e-Tag (if they have rights to do so). Balancing Authorities, Transmission Service Providers, and Purchasing-Selling Entities are responsible for providing this service directly or for arranging with a third party to provide this service as their agent. Finally, Transmission Service Providers may use the Approval Service to issue corrections or adjustments.

### **1.4.1.4 Reliability Authority Service**

Reliability Authority Services receive all Requests from Authority Services. These e-Tags inform the Reliability Authority Service of the expected flows a transaction will create, and are used by Reliability Coordinators to mitigate constraints should the need arise.

The Reliability Authority Service can be referred to throughout this document as **RA Service**.

## **1.4.2 Tag Identification**

All e-Tags and e-Tag creation Requests shall be uniquely identified by an e-Tag ID. Electronic communications between Agent, Authority, and Approval Services shall require the association of an additional Security Key or Keys to control all interactions related to a given transaction. The following subsections describe the requirements for the creation of the e-Tag ID and Security Key.

### **1.4.2.1 E-Tag IDs**

Every transaction shall be identified by a unique e-Tag ID based on key attributes of the transaction as specified in the Data Model:

- Source Balancing Authority Entity Code
- PSE Entity Code (e-Tag Author PSE)
- Unique transaction identifier (e-Tag Code)
- Sink Balancing Authority Entity Code

The "Source Balancing Authority" shall be defined as the host Balancing Authority in which the generation is located. The "Sink Balancing Authority" shall be defined as the host Balancing Authority in which the load is located. The "e-Tag Author PSE" shall be defined as the PSE who is creating and submitting the New e-Tag Request to the Authority Service.

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Since this e-Tag ID and the contents of the e-Tag contain potentially commercially sensitive information, all e-Tag services shall treat such information as confidential.

All services shall reject any attempt to submit as new an e-Tag ID that is identical to an existing e-Tag creation Request's e-Tag ID for a period of one (1) year from the stop date and time associated with the existing e-Tag. Agent Services shall be required to ensure that each e-Tag ID is unique for a period of not less than one (1) year from the stop date and time associated with the last transaction that was assigned that e-Tag ID.

### **1.4.2.2 Security Keys**

The electronic exchange of e-Tag information shall require the assignment of unique "Security Keys" to be associated with the transaction. Security Keys control communication between the Agent, Authority, Approval, and Reliability Authority Services. The Security Key is a unique 12 character alphanumeric (0–9, A–Z, a–z; case sensitive) security token.

The Agent generates a unique Security Key to associate with the e-Tag at the time of submission. All subsequent messages exchanged between the Agent and Authority Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the e-Tag Author's Agent Service.

The Authority Service shall also generate one unique Security Key for each entry in the distribution list to be associated with the e-Tag on the initial distribution of the e-Tag. All subsequent messages exchanged between the Authority and Approval Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the Sink Balancing Authority's Authority Service.

In certain situations, Security Keys can exist independent of e-Tag IDs (such as the Get e-Tags and Get e-Tag IDs requests). Those situations will be described in detail in the appropriate sections of this document.

The Security Key must either be random or have the appearance of randomness. Although schemes may be used to generate a key, these schemes must not be obvious to the interested observer (for example, APR05991240X is obviously a date and time, but a ciphered version of this, KYZ71434450H, might not be). The Security Key must be considered a security mechanism, and as such, must not be easily deducible by parties lacking first-hand knowledge of the specific Security Key generation mechanism employed by the system.

It should be noted that each Authority Service is assigned by NERC a unique Security Key for interaction with the IDC. This key is only to be used for communication with the IDC, and must be kept confidential. This key secures communications from the IDC to each Authority Service as well. NERC will notify each registered Authority Service with that Authority Service's unique Security Key to be used in all messages between the IDC and Authority Service.

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### 1.4.3 Test e-Tags

An e-Tag can be designated as a Test e-Tag for the purpose of troubleshooting a system or component of the system. All Agent, Approval, and Authority Services shall accept and process Test e-Tags and in an identical fashion to all other e-Tags, with the following exceptions:

- Viewing applications MUST indicate to the user that the e-Tag is a Test e-Tag.
- Test e-Tags do not require an approving party to evaluate the e-Tag within the Assessment Time as defined in NERC/NAESB Standards.
- Test e-Tags must not be treated as actual e-Tags (the information contained within a Test e-Tag must not be used to make any business decisions).
- The Authority Service shall not initiate the forwarding of these test e-Tags to the RA Service at any time.
- Test e-Tag Requests always transition to a Request State of APPROVED on expiration of the assessment period and no approval entities have denied the Request or when all approval entities have approved the Request.

In addition, the following rules must be observed with regard to test e-Tags:

- Test e-Tags must ONLY be used for troubleshooting purposes. System development, training, and demonstration, as well as any other non-troubleshooting related need must NOT utilize the Test e-Tag feature.
- A particular PSE (as listed in the EIR) may only issue a total of ten (10) Test e-Tags per clock hour. Any Test e-Tag submissions exceeding this number may be rejected at the option of the service being sent the Test e-Tag.
- Test e-Tags may be rejected at the option of the service provider if they are sent during the last twenty minutes of a clock hour (i.e., xx:40 – yy:00).
- 

Test e-Tags must not reflect authorship that does not match the listed service affiliation in the EIR. If a Test e-Tag is sent from an external system to another system, and the e-Tag Author is a registered user of the receiving system, the receiving system may reject the e-Tag. For example, if PSE XXX is registered to use vendor X, and a message comes in from vendor Y claiming to be authored by PSE XXX, vendor X may reject the message.

### 1.4.4 Communications

All e-Tag messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, procedures on remote machines are invoked; passing any needed data as input parameters to the function or method. When the function is complete, it returns the result of its processing.

#### 1.4.4.1 Method Types

The e-Tag services use various types of methods for various purposes. The methods can be broken up into the following categories.

##### 1.4.4.1.1 Requests

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

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### 1.4.4.1.2 Request Distributions

Request Distributions are the methods used to send requests to all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

#### 1.4.4.1.3 Actions

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### 1.4.4.1.4 Information Distributions

Informational distributions are the methods used to send information related to the State of a particular Request or set of transactions. These are sent to entities to alert them of particular Request's implementation or withdrawal, as well as specific entities approvals and denial of a Request.

#### 1.4.4.1.5 Queries

Query methods are used to search and recover data from an Authority Service or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query.

#### 1.4.4.1.6 Callbacks

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

### 1.4.4.2 Message Size Limitations

In order to ensure reliable operation of the e-Tag systems, the following limitations of message size are to be observed:

- Any RequestNewTag or RequestProfileChange specifying a duration greater than 33 days in length may not have a Content-Length greater than 512000 characters. Agent systems should not issue such Requests, and Authorities should reject such Requests if they are received.

## 1.4.5 Financial and Physical Paths

Paths define the flow of both energy flow and fiduciary responsibility. Financial Path components are referred to as **market segments**, while Physical Path components are called **physical segments**.

A physical segment may be one of three types:

- **Generation** that is supplying energy for delivery,
- **Transmission** that is wheeling the energy from one point to another, and
- **Load** that is consuming the delivered energy.

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Market segments are financial responsibilities for the receipt and/or delivery of the energy. A market segment typically contains physical segments (illustrating holding of title across physical movement of energy), but may contain no such physical segments (illustrating a non-physical title-holder). Physical segments must be contained within market segments.

An e-Tag may have only one generation segment and one load segment. When ordered, these segments must be indicated as the first and last physical segments in the path, respectively.

For a detailed discussion of Paths and how they function, please see **Section 6.2.2, Market Segments**, and **Section 6.2.3, Physical Segments**.

### 1.4.6 Profile Descriptions

Profiles define the level at which transactions should run, as well as the factors that set those levels. For detailed discussions on how profiles function please see section **6.1.4**.

In general, a profile will have three levels

- The energy flow
- The maximum level at which the energy may reliably flow (default is unlimited)
- The transmission capacity committed to the transaction by the e-Tag Author as a Transmission Allocation

Tag Authors can modify the energy profile up or down without exceeding the Transmission Allocation. Should a curtailment occur for reliability reasons, then the reliability limit must be adjusted to become the new maximum level. The e-Tag Author can modify the energy profile on the e-Tag up or down even while under curtailment, but the reliability limit will always be the maximum level. The lowest of the reliability limits or the market level will indicate the actual flow on the e-Tag. For DYNAMIC type e-Tags, the e-Tag author, Source BA, or Sink BA may make market level profile adjustments after-the-fact (to reflect metered values) but may not adjust the transmission allocation profile. Any previously existing reliability limits must be cleared thus achieving both a reload and a profile change with one profile change request.

Profiles may optionally reflect ramp start and stop durations for each profile block. The ramp stop duration will be ignored on all blocks except for the last profile block. Only the ramp start duration will be used in energy level calculations for all other profile blocks. All ramps imply straddle ramps. Instantaneous ramps are indicated by a zero minute ramp duration. The ramp start and stop data represents minutes over which the generator will increase or decrease generation from the previous block level to the current block level. The ramp beginning and end times for each profile block can be calculated based on the ramp duration and profile block start and end times.

The following diagrams illustrate the relationship between these levels:

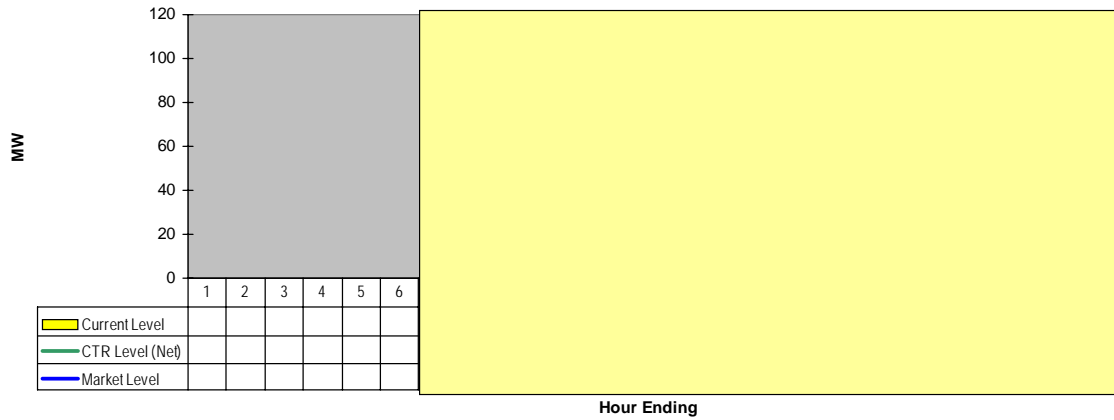
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### STEP 1 – New Tag Submission

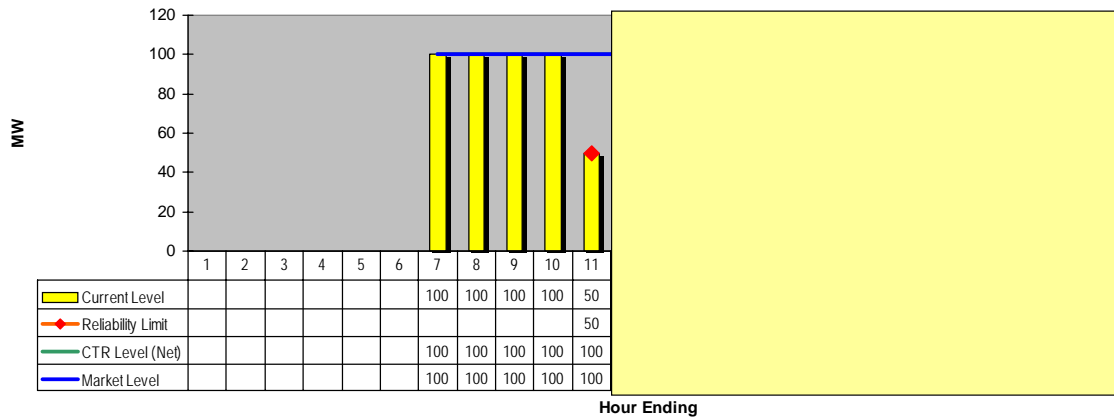
HE7 - HE22 100MW



In Step 1, the e-Tag has been submitted, but has not yet run. The yellow overlay indicates points in the future.

### STEP 2 – Curtailment

Curtailed to 50MW at 10am



In Step 2, the e-Tag has been running and is curtailed.

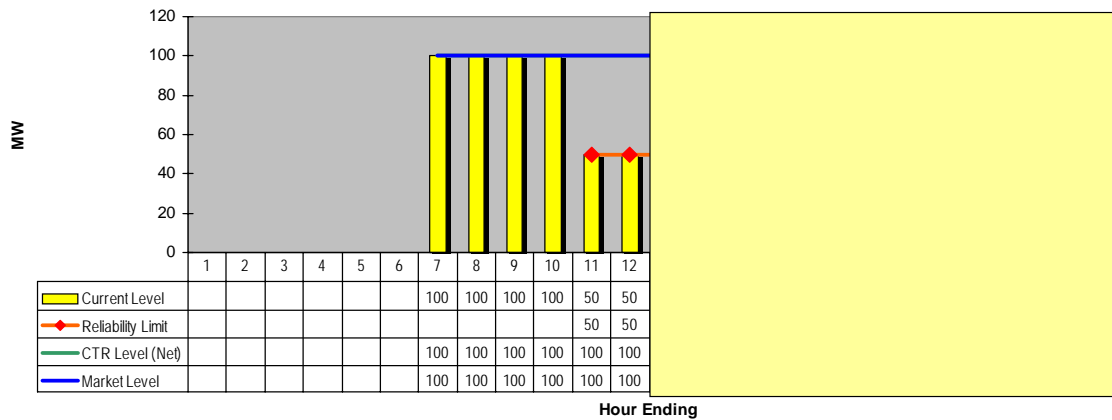
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### STEP 3 – Curtailment Continues

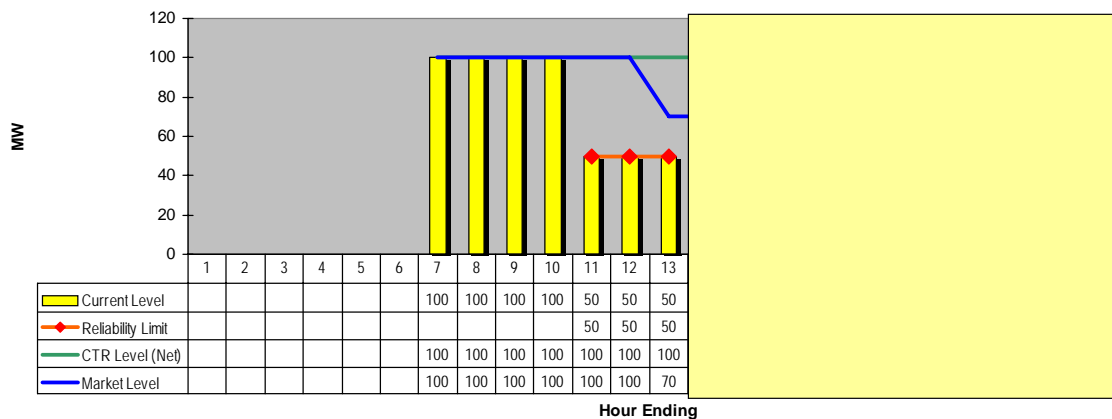
Reissued at each hour



In Step 3, the Curtailment continues and is reissued twice.

### STEP 4 – Tag Author Sets Reload Level

70MW until HE 18



In Step 4, the e-Tag Author elects to limit their transaction to a maximum reload of 70MW until HE 18.

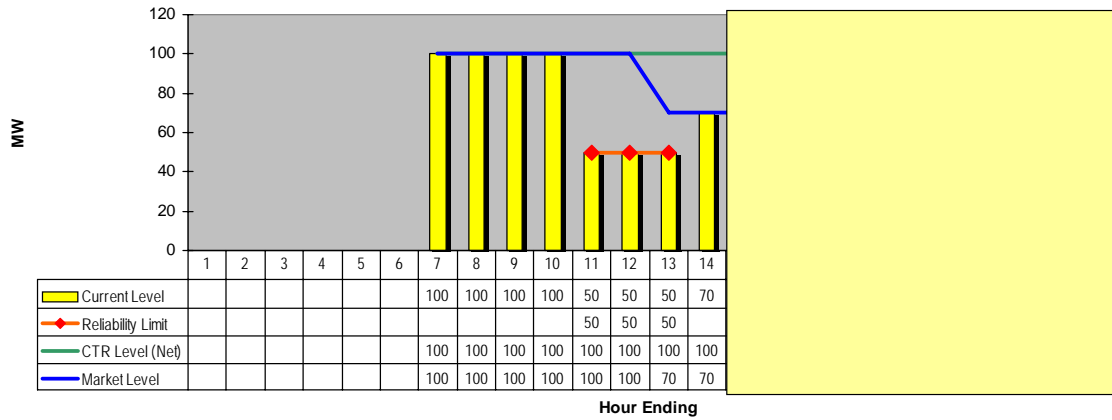
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### STEP 5 – TLR Released, Tag Partially Reloaded

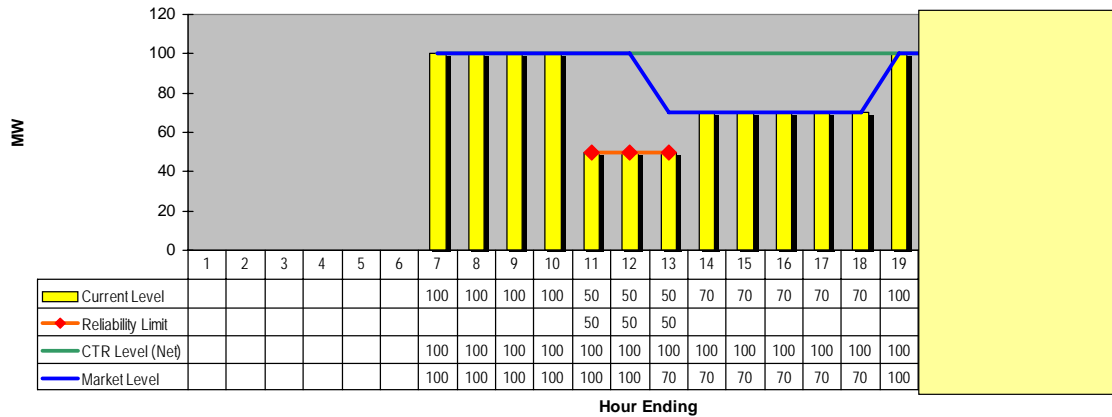
Reloaded to 70MW



In step 5, the e-Tag is Reloaded by the RC/BA to the 70MW level as specified.

### STEP 6 – Tag Fully Reloaded

70MW until HE 18



In Step 6, the e-Tag is reloaded by the RC/BA to its previous 100MW level as specified.

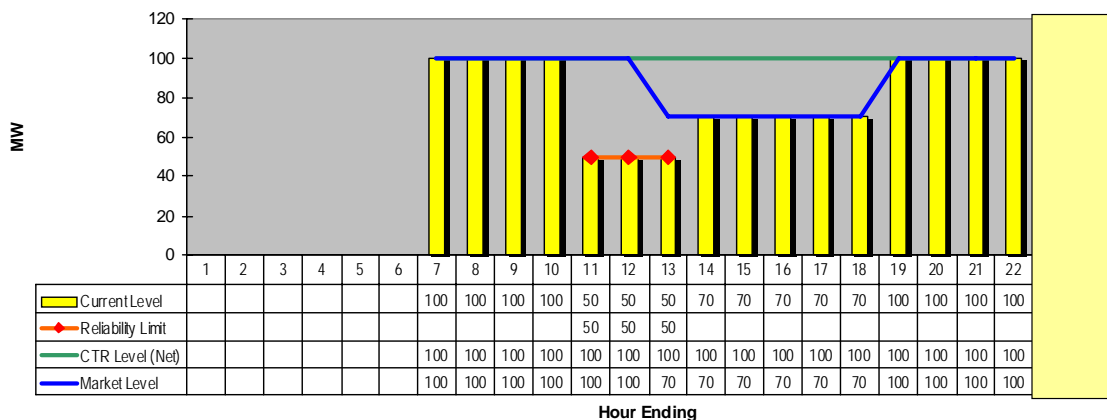
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### STEP 7 – Transaction Complete

70MW until HE 18



In Step 7, the e-Tag has completed.

### 1.4.7 Transmission Allocation

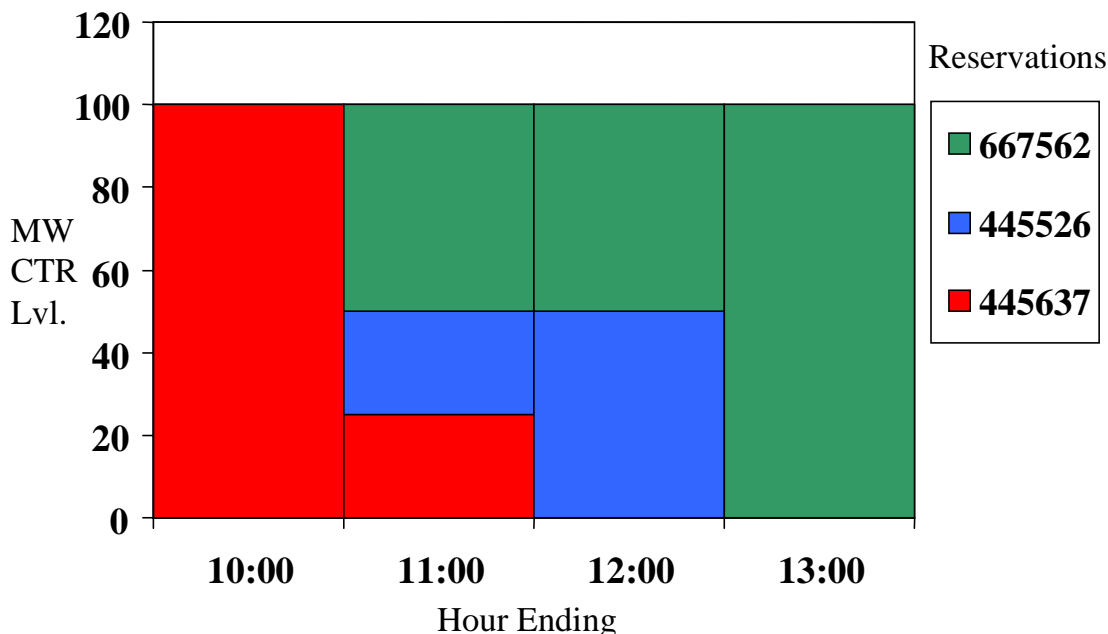
Transmission Allocation describes the manner in which an e-Tag Author specifies which transmission reservations will be used to support the capacity committed in a Transmission Service Provider's associated profile. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.

In the example below, an entity is supplying a total of 100 MW of transmission capacity over four hours by using three different reservations in combination:

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For more detail on this topic, please see **Section 6.2.4, Transmission Allocations**.

### 1.4.8 Timing Requirements

To enforce Request submission and evaluation timing requirements, the Authority Service shall maintain system time to an accuracy of one (1) second traceable to the National Institute of Standards and Technology (NIST). Approval and Agent Services are encouraged to keep their time synchronized in this manner as well.

All times communicated through an e-Tag shall be noted in UTC. User interfaces and local systems may reflect local time, however, any system using time zones other than UTC must properly convert those times into UTC prior to communicating with other systems.

NERC/NAESB Standards provide details on the manner in which timing requirements should be implemented.

#### 1.4.8.1 Approval of Reliability Changes

**All changes that impact the Reliability Level profile (i.e., curtailments and reloads) must be actively approved in order to be implemented. Profile changes will not be implemented if either actively or passively denied.**

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### 1.4.9 Tag Auditing

Each service shall be responsible for keeping audit information describing its interactions with other services. These requirements are described below.

#### 1.4.9.1 *Message Rejection Log*

Any service that rejects a message as containing a fault or an error must log the type of rejection, the date/time of the rejection, the sending entity (if identifiable), and the e-Tag ID (if identifiable). This information must be kept available by written request for a minimum of ninety (90) days after the rejection.

#### 1.4.9.2 *Historical e-Tag Archive*

Every service shall keep available for retrieval every e-Tag and associated messages received by the service until ninety (90) days past the e-Tag's stop date/time. Authority Services must have this information available to Approval and Agent Services through standard e-Tag querying mechanisms throughout the ninety-day period, as well as through written request by other parties who may require data but not be participants listed on the e-Tag (i.e., NERC). Agent and Approval Services must have these e-Tags available by written request. Approval and Agent Services making a request from the Authority Service for a certain time range must be provided with all e-Tag and associated messages associated with the requestor for that time range.

~~Messages sent from an authority service to a Secondary Service URL shall be kept for a minimum of seven (7) days from the time that the message was sent.~~[p2]

#### 1.4.9.3 *Statistics*

Every service shall maintain statistical information as defined below. This information must be logged, as it occurs, NOT after the fact. In this manner, services may accurately reflect data before it is modified through overrides or updates. This information must be available by written request for a minimum of ninety (90) days in the form of reports. These reports must be written based on the requests processed in one week (00:00 UTC Sunday to 23:59:59 UTC Saturday). This information must be available to parties who may require data but not be participants to any specific e-Tag (i.e., NERC).

- Number of LATE Requests, by requester
- Number of ATF Requests, by requester
- Number of return values of INVALID, by entity
- Number of return values of COMMFAIL, by entity
- Number of returned Faults, by entity.
- Number of Request Approval State Type of PASSIVE, by approver

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### **1.4.9.4 Authority Service Off-Line Archive**

All Authority Services shall archive all message dialogues (all received and issued messages and their associated responses), as follows:

- These message dialogues need not be available for online query
- Authority Service Operators must have the ability to supply written reports listing message traffic for a particular entity or transaction within a reasonable amount of time (e.g., within seven business days).
- Authority Service Operators must retain message dialogues as specified in NERC/NAESB standards.

### **1.4.10 Rounding**

MW values specified in e-Tag profiles must sometimes be integrated into MWh values across appropriate schedule intervals. E-Tag profiles that start or stop within schedule intervals may result in fractional MWh values being calculated. These MWh values must be rounded to the nearest whole MWh (< .50 down, >= .50 up).

Calculation of aggregated data such as hourly, daily, monthly, and e-Tag totals must be performed in accordance with applicable NERC/NAESB Coordinate Interchange Standards.

### **1.4.11 Carbon Copy List**

E-Tags may optionally contain a list of entities (BA, Transmission Service Provider, or PSE) that are provided with a copy of the e-Tag. This list is set as part of an e-Tag creation request and can't be changed by subsequent corrections, adjustments, etc. E-Tag Authors may select up to five entities for inclusion in this list. These entities are provided with a copy of the e-Tag and any subsequent changes in the same manner as which entities in the Financial Path are provided with copies of the e-Tag. These entities will not be given approval rights and must not appear in any other role in the e-Tag. For entities of type PSE, all messages will be sent to the registered agent URL. For entities of type BA and Transmission Service Provider, all messages will be sent to the registered approval URL.

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### **1.5 Training Requirements**

#### **1.5.1 User Guides**

Anyone developing e-Tag software must provide a user guide, which shall describe, at a minimum, the following information:

- The target user (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

#### **1.5.2 User Education**

Anyone developing e-Tag software must develop education programs for the use of their software. Education programs must cover the following topics:

- Who the target user is (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

Education programs may be developed for self-study, online education, or other means. The developer may offer education workshops; however, the cost of such workshops may be borne by the software customer.

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### **1.6 Functional Concepts**

#### **1.6.1 Initiating a Request**

Requests are initiated in order to create or modify e-Tags.

##### **1.6.1.1 Submitting a New e-Tag Request**

Submitting a New e-Tag Request is the process in which an e-Tag Author presents a completed RFI/e-Tag to the e-Tag Authority Service for processing. The e-Tag Author uses its Agent Service to write the e-Tag and then communicate that e-Tag as a request to the Authority Service. The Authority Service then processes the transaction and manages the state of the New e-Tag Request. Using the time of receipt and the Ramp Start Time, the Authority Service sets the ActOnByTime and the TimeClassification (OnTime, Late, or ATF) based on the NERC/NAESB Interchange Standard timing tables. A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1.

##### **1.6.1.2 Submitting a Correction Request**

The e-Tag Author makes e-Tag Corrections when a portion of the e-Tag data must be changed. A correction to an e-Tag can only occur prior to that e-Tag attaining a Composite State of CONFIRMED or IMPLEMENTED. During the New e-Tag Request approval process, in which parties evaluate the transaction for ability to implement, the e-Tag Author may notice or be informed of a needed change in the e-Tag. That change may be written and submitted using the Agent Service.

The correction resets the Request State for entities affected by the correction, distributes the correction, and requires entities affected to re-evaluate the Request using the corrected data. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables. Unaffected entities need not re-approve the e-Tag. Affected entities are defined in section 1.6.2.2.

Transmission Service Providers may also submit a correction. In this case, the Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider (TPCode). The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) and the profile may not be extended. Transmission Service Provider created Correction Requests are unilateral and require no approval by any other entity. Upon receipt of a corrections submittal from a Transmission Service Provider, the Authority Service does not reset the ActOnByTime or TimeClassification but will redistribute the correction.

NERC/NAESB Standards provide additional details on the manner in which corrections should be made.

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### 1.6.1.3 **Submitting a Profile Change Request**

Changes to a Profile can be requested by several different parties and for three primary reasons:

- To implement market-based modifications to the Transmission Allocation profile.
- To implement market-based desires to modify or extend energy flow
- To implement reliability-based desires to modify energy flow (i.e., curtailments and reloads)

When any of the above possible reasons are needed, the party wishing to implement a change to a Profile will use their appropriate e-Tag service to write and send a change Request to the Authority Service. The Authority Service then processes the transaction Request and manages the state of the Request. When a profile change is requested for reliability purposes (i.e. curtailment or reload), the Request author must submit a modified profile at the POR or POD of any single physical segment; the Authority Service will then calculate the approximate losses for all other profiles, if applicable. When an e-Tag Author requests a profile change, they must provide all appropriate profiles necessary to reflect appropriate losses.

### 1.6.2 Request Distribution

#### 1.6.2.1 **Distributing a New e-Tag Request**

When an agent submits a New e-Tag Request to an Authority Service, the Authority Service distributes copies of that e-Tag to the transaction's participants. Transaction participants include all entities specified in the physical and market path, entities selected in the Carbon Copy list, and any other entities as specified in the NERC/NAESB Interchange Standards. The rights associated with each participant are defined in NERC/NAESB Standards. Entities in the Carbon Copy list must not be given approval rights.

The Authority Service provides a copy of the new e-Tag to each participant, along with a description of their role in the transaction. Each receiving Approval then processes the Request and solicits approval of the Request from its using participant.

#### 1.6.2.2 **Distributing a Correction Request**

Corrections are distributed to all entities that received the original e-Tag. Entities specifically impacted by the correction are asked to re-evaluate the e-Tag based on the corrected information. Impacts of corrections are defined in the following table.

Correction Type	Impacted Entity
<i>Any allowable correction to a Physical Generation Segment</i>	<i>Source BA, Generation Providing Entity</i>
<i>Any allowable correction to a Physical Transmission Segment or Transmission Allocation</i>	<i>Transmission Service Provider, Scheduling Entities (Intermediate Bas), Transmission Customer</i>
<i>Any allowable correction to a Physical</i>	<i>Sink BA, Load Serving Entity</i>

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<i>Load Segment</i>	
<i>Any allowable correction to a Market Segment</i>	<i>Purchasing-Selling Entity</i>
<i>Any allowable correction to any product code (energy or transmission) made by the e-Tag Author</i>	<i>In addition to the above, the last Physical Transmission Segment's Transmission Service Provider, LSE, Sink BA</i>
<i>Transmission Service Provider correction</i>	<i>No re-evaluation required, no approval required</i>

Corrections are not permitted to add or remove participants from an e-Tag.

Approval Rights over the transaction remain as established in NERC/NAESB Standards. Entities impacted by corrections that are required to approve the transaction must be alerted to the correction. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables.

NERC/NAESB Standards contain additional information regarding the processing of corrections.

### **1.6.2.3 Distributing a Profile Change Request**

Profile Change Requests are distributed to all entities that received the original e-Tag. Depending on the type of change requested, the parties required to approve the Request may vary. NERC/NAESB Standards describe the entities required to evaluate the modification and the criteria they should use in their evaluation.

## **1.6.3 E-Tag Request Actions**

### **1.6.3.1 Approving and Denying Requests**

Approval entities will use a variety of methods, consistent with NERC/NAESB Standards, to determine whether an e-Tag Request should be approved or denied. Approval entities must actively approve or deny all requests within a specified Request evaluation period.

NERC/NAESB Standards provide details on the timing requirements under which requests should be made and evaluated.

When an approval entity decides to approve or deny a Request, the entity utilizes its Approval action to change the Approval State to "APPROVED" or "DENIED".

An approval entity has the option to change its Approval State at will, until the Request State has reached a final state.

If the entity wishes to indicate that it is reviewing a Request, but will not have an answer for some time, the entity can elect to change its Approval State to "STUDY". The action of placing an e-Tag in a STUDY state does not extend the approval window. The

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Approval Entity must still act in a timely manner to set the Approval State to APPROVED or DENIED before the Request evaluation deadline has passed.

The Authority Service collects these approval States and uses the indicated dispositions to determine transaction request implementation and rejection. NERC/NAESB Standards describe the manner in which an Authority Service determines the resolution of a particular pending Request. Once an e-Tag has reached a final state, all parties are informed of the resolution

### **1.6.3.2      *Withdrawing a Request***

For both New e-Tag Requests and Profile Change Requests, the Request initiator may withdraw the Request at any time up until the Request has reached a final state by submitting a WithdrawRequest message. If a Request has already been APPROVED, then that Request cannot be WITHDRAWN. In order to withdraw a Request, the initiator uses its Agent or Approval Services to send a request to the Authority Service to withdraw the Request. Upon timely receipt of the WITHDRAW request, the Authority Service will consider the Request WITHDRAWN and process that event accordingly, distributing notification of the Request State change to all parties.

The only party that may withdraw a Request is the original initiator of a Request or holder of the initiator's Security Key. No Request may be withdrawn without a valid Security Key.

### **1.6.3.3      *Canceling a Request***

Should an e-Tag's author wish to back out of a CONFIRMED e-Tag, that entity must submit a RequestTerminateTag message to the Authority Service. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the cancellation request is approved, the Composite State of the e-Tag is set to CANCELLED and processed accordingly with both the energy and transmission allocation profiles set to zero.

### **1.6.3.4      *Terminating an e-Tag***

Should an e-Tag's author wish to back out of an IMPLEMENTED e-Tag, that entity must submit a RequestTerminateTag message that includes a valid termination time. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the termination request is approved, the Composite State of the e-Tag is set to TERMINATED at the termination time and processed accordingly. The energy and transmission allocation profiles will be set to zero effective at the specified start time.

Should an entity wish to correct an invalid ATF e-Tag, that entity must submit a RequestTerminateTag. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If approved, the Composite State of the e-Tag is set to TERMINATED immediately and processed accordingly with both the energy and transmission allocation profiles being set to zero.

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### 1.6.4 Information Distribution

#### 1.6.4.1 *Distribution of Request Approval State*

When a significant status change occurs (as defined in section 3.6.4.1), the Authority Service responsible for the e-Tag will notify all parties of that change. By doing so all parties are advised of the current disposition of the e-Tag. In the case of entities electing to deny a New e-Tag Request, the e-Tag Author may attempt to correct the e-Tag in order to satisfy the needs of the denying party.

#### 1.6.4.2 *Distribution of Request Resolution*

When the final disposition of a Request has been determined (e.g., APPROVED, DENIED, WITHDRAWN, etc.), the Authority Service responsible for the e-Tag will notify all parties electronically of the request's resolution. By doing so, all parties are advised that they should either implement or discard the request.

#### 1.6.4.3 *Distribution of Potential TLR Profile Change*

The Reliability Authority Service may issue from time to time a warning notification called Potential TLR Profile Change. These warnings are distributed electronically to each Purchasing-Selling Entity listed on the e-Tag. These notices are preliminary, and may not reflect final curtailments.

Potential TLR Profile Change warnings are issued at the time a Reliability Coordinator requests a set of curtailments, but prior to the final confirmation and issuing of those curtailments by the RA Service. These warnings can be used by market participants to prepare for curtailments. The warnings may also be used by market participants to proactively modify their transactions in ways that address the reliability needs of the system without compromising the financial positions of the marketplace.

### 1.6.5 Query Functions

Queries may not be abused through excessive querying. General rules for this functionality are as follows:

- No service may query for the same data more than once (1) per minute
- Querying may NOT be considered a replacement for the requirement to have a dedicated listener for inbound information distributions. Services that observe behavior counter to these requirements may ignore such requests if the processing of those requests represents a threat to the integrity of the system. Prior to ignoring the requests, contact must be made with the offending entity and resolution be attempted. If the attempts to resolve the issue fail, the recipient of the requests may block those requests, provided.
  - The processing of those requests represents a real, *documentable* threat to the integrity of the system,
  - The threat is fully documented (i.e., processor logs, customer complaints, etc...)

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- That recipient has met the above minimum requirement, and
- The attempt to address the problem has been documented as well (i.e., E-Mails, Telephone recordings, etc...).

Some queries are processed through two-part messages, or asynchronous messages. In these types of messages, a query is made, and the recipient acknowledges receipt of the query, but does not respond immediately. The connection between the systems is broken, and the recipient processes the message. Upon completion of the processing, the recipient issues a callback message to the original query author and provides the results of the processing. In this manner, the recipient of the query may manage the processing of such queries more efficiently without threat to the integrity of the system (due to long complex queries that may take significant time and resources to process).

### **1.6.5.1 Querying for e-Tag Summaries**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query Authority Services for a list of e-Tag summaries for a specified period of time for e-Tags in which they participate. Query parameters allow the ability to retrieve e-Tag summaries that:

- were created/last modified during a specified period of time, OR
- have a profile with the first start/last stop intersecting the specified period of time.

E-Tag data may be retrieved for past, current, or future time ranges. This method is intended to be used for emergency operational e-Tag recovery, and is not designed to be used for continuous real-time polling. The duration of the specified time period must not be greater than 25 hours. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Querying for e-Tag summaries is an Asynchronous message.

### **1.6.5.2 Querying for an e-Tag**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query for the current data set that describes an e-Tag from the Authority Service. This includes all Request data associated with an e-Tag, including a New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

### **1.6.5.3 Querying for e-Tags**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query for a set of data that describes several e-Tags from the Authority Service. This includes all Request data associated with an e-Tag, including a New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid Security Keys (or, for Asynchronous message, must have a listener registered for the entity they represent). Queries for multiple e-Tags are processed through Asynchronous messages.

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### **1.6.5.4            *Querying for an e-Tag's History***

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a list of all of the methods that have been applied to a single e-Tag. This query allows a participant to re-construct the complete set of actions that were taken against an e-Tag. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Queries for multiple e-Tags are processed through Asynchronous messages.

### **1.6.5.5            *Querying for Request IDs***

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query an Authority Service for a list of Request IDs, in order to verify synchronization with the Authority Service's log of requests. Should an entity discover that they are not synchronized with the Authority Service then, this listing of Request IDs may be used to query an Authority Service node for the corresponding Request messages. The default behavior of the Authority Service node is to return all Requests grouped by Request State (e.g., PENDING, APPROVED, etc.) and ordered by original send time. An entity may ask that the listing be filtered based on one or more Request States. Once the Request ID listing has been retrieved, an entity may query the Authority Service node and retrieve sets of Request messages.

A Request ID listing may be used in two ways. The first is to notify an entity of requests they need to retrieve after communication failure. The second is for an entity to determine for itself which requests it needs after missing requests are detected. In either case, the Authority Service node may determine based on network traffic and the absence of messaging faults the number of Requests that may be retrieved at one time.

Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

### **1.6.5.6            *Querying for a Specific Request***

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for a copy of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

### **1.6.5.7            *Querying for a Specific Request's State***

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for the States of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid Security Keys.

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### **1.6.5.8 Querying for Service Availability**

Any registered entity (PSEs, BAs, Transmission Service Providers, Reliability Coordinators, etc.) may use the QueryAvailability message to query any e-Tagging service regarding its availability to process messages. For purposes of enforcing the restriction that "no service may query for the same data more than once (1) per minute", QueryAvailability messages sent to the same URL are considering to be querying for the same data, even if the ToEntity code is different in the messages.

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# Section 2 - Tag Agent Service Functional Requirements

## 2.1 Introduction

All Purchasing-Selling Entities (PSEs) and any other parties responsible for submitting Arranged Interchange shall communicate the necessary information via the Agent. The Agent Service shall comply with all functional requirements set forth in this document. Users may elect to comply with these Agent Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Agent Service shall provide facilities to:

- Accept and validate input e-Tag data from the user.
- Generate all XML necessary to completely specify the transaction as defined in the e-Tag Data Model based on user input data.
- Assign and maintain the correspondence between each transaction's e-Tag ID and e-Tag Author's Security Key.
- Identify the Authority Service associated with the registered Sink BA in the transaction and electronically communicate the e-Tag ID, Security Key, and associated e-Tag data to that Authority Service.
- Receive unsolicited information messages regarding e-Tags that they are a party to but for which they have no direct approval rights.
- Query Authority Services for the current State of each transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to correct any pending transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to withdraw any pending transaction or request submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to modify any existing transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Receive unsolicited information from the other e-Tag services regarding e-Tag updates, curtailment warnings, etc.

Information systems designed to provide more than one e-Tagging service (e.g., Agent and Authority Services) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

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### **2.2 Registry Usage**

The Agent Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A listing of all such entities shall be maintained and available for downloading from the Electric Industry Registry web site. The Agent Service shall supply a procedure to allow updates from the EIR on demand as well as on a prescheduled interval. The EIR shall be in a format defined in a document posted on the EIR's web site.

The Agent Service must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

### **2.3 Tag Data Entry and Viewing**

The Agent Service shall provide a mechanism for the user to input, edit, and view e-Tags, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document, with the exception that the user shall have the facilities to supply all transaction related information necessary to create complete, valid e-Tags, as well as the interfaces to view those e-Tags.

#### **2.3.1 Tag ID Creation**

Each e-Tag submitted for approval to any Authority Service by the Agent Service shall be identified by an e-Tag ID. This e-Tag ID must not be identical to any used previously to represent transactions with effective stop dates less than one year in the past. *See Section 1.4.2.1 "Tag IDs"*.

#### **2.3.2 Security Key Creation**

A unique Security Key shall be associated with the initial transmission of an e-Tag from the Agent Service to the appropriate Authority Service. The Agent Service shall be responsible for generating this Security Key consisting of a unique 12 character token. All subsequent messages exchanged between the Agent and Authority Services in regard to this e-Tag shall refer to both the e-Tag ID and Security Key assigned by the user's Agent Service. *See Section 1.4.2.2 "Security Keys"*.

### **2.4 Date and Time Handling**

The Agent Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchange with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. The Agent Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Agent Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time. All start and stop times in any e-Tag request must be on a minute boundary (i.e., whole minutes).

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### **2.5 Data Validation**

The Agent Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **2.6 Function Implementation**

The Agent is responsible for being able to call the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributePotentialTLRProfileChange
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

#### **2.6.1 Initiating a Request**

The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink Balancing Authority on the e-Tag. Send the XML message created during the

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first step to this URL as the payload of an HTTP message, and wait for the response.

- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### **2.6.1.1 Submitting a New e-Tag Request**

Write Request – The e-Tag Author must write a complete representation of the transaction as defined in NERC/NAESB Standards and supported in Section 6, Data Model Overview. The Author must also provide any additional parameters necessary to successfully call the RequestNewTag method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1. Specifically, Agent Services must submit all appropriate profiles, but are not allowed to submit Current Level profiles. All Correction IDs must be set to zero in the New e-Tag Request.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag being sent must not contain a Profile representing a transaction starting more than 168 hours in the past.
- ATF e-Tags must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the Scheduling Entity field is left blank, the Agent Service must ensure that a BA code that is identical to the Transmission Service Provider code exists prior to submission to the Authority Service. If no BA code identical to the Transmission Service Provider code is found, the Request is invalid.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the new e-Tag a reference number, through which the e-Tag Author may query. All New e-Tag Requests will receive a request ID of zero (0).

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### **2.6.1.2 Submitting a Correction Request**

Write Request – The e-Tag Author is responsible for creating the e-Tag correction(s) if needed. The e-Tag Author must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to contract reference number (OASIS assignment reference number) must not only contain the reference number, but also the Transmission Allocation ID, a reference to the Parent Segment, the Product, and the associated transmission customer or TPSE.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached a final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Agent Service must record these numbers for later reference and integrity verification.

### **2.6.1.3 Submitting a Profile Change Request**

Write Request – The e-Tag Author must write a complete representation of the Profile Change to the e-Tag. The Author must also provide any additional parameters necessary to successfully call the RequestProfileChange method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). e-Tag Authors are required to submit all necessary profiles to support the desired change(s); Authority Services will not auto-generate upstream/downstream values as done during reliability limit setting. Agent Services are not allowed to make changes to the Reliability limits except in the case of DYNAMIC type e-Tags where changes made by the Agent Service to the market level profile after the fact (to reflect actual metered values) will clear any previously existing reliability limits. Agent Services are not allowed to make changes to the Transmission Allocation profile when submitting any ATF adjustment (including DYNAMIC type e-Tags ATF adjustments). Furthermore, Agent Services are not allowed to submit Current Level profiles, because these profiles are calculated.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated

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- Profile Changes can only occur once an e-Tag has transitioned to the Composite State of CONFIRMED OR IMPLEMENTED.
- Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Extensions must be received NO LATER than the last time specified in any profile in the e-Tag. e-Tags may NOT be extended once the e-Tag's profile (including any previous extensions) has been completed. ATF e-Tags may not be extended.
- Profile change requests may not add or remove any entity.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the Profile Change a request number through which the e-Tag Author may query for Request State. That number will always be greater than zero (0).

### Additional Function Implementation Details

It is possible for an e-Tag Author to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should an e-Tag Author need to modify a transmission allocation then the e-Tag Author must specify the change in the same manner in which profile change or extension would be performed. For example, if a request was made to extend an e-Tag for an additional hour (while intending to utilize the same transmission reservation as used in the previous hour), then an allocation exception would be inserted that specified the additional hour.

Modifications to DYNAMIC type e-Tags more than one hour in the past are used to set the actual interchange quantity. The current level needs to be set to this actual interchange quantity regardless of any other profile values. This is achieved by clearing any existing reliability limit and setting the Market Level profile.

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### 2.6.2 Request Distribution

The Agent Service only receives three types of Request Distribution – New e-Tag Request Distributions, Correction Request Distributions, and Profile Change Request Distributions.

Upon receiving a distribution message, the agent software should decode, parse, and validate the XML message. If the message doesn't pass syntactic and semantic validation, then the Agent Service must return a fault or error response to the sender. If the message does pass validation, then the agent must return a success response to the sender. Either way, the Agent Service software is required to provide a valid XML response (success or failure) to the sender of any distribution message.

If the message passes validation and a Secondary Service URL is registered for the Agent Service PSE, the valid message received by the Agent Service must be sent to it's Secondary Service URL. [p3]

#### 2.6.2.1 *Processing a New e-Tag Request Distribution*

New e-Tag Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method sections must not be violated
- An e-Tag with the ID presented must not already exist on the Agent Service

#### 2.6.2.2 *Processing a Correction Request Distribution*

Correction Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached their final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Agent Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the Agent Service Operator that the correction has occurred, highlighting the correction for their inspection
- Immediately consider re-setting any previous e-Tag assessment action (APPROVED, DENIED, STUDY, etc.) of an approval entity that is impacted by the correction

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### **2.6.2.3 Processing a Profile Change Request Distribution**

New Profile Change Request Distribution messages must pass the following rules in order to be considered valid:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

## **2.6.3 Request Actions**

### **2.6.3.1 Approving and Denying Requests**

The Agent Service has no requirements with regard to Request Approval and Denial.

### **2.6.3.2 Withdrawing a Request**

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority Service at the time the request was made.
  - The original Security Key for the transaction that was used in the e-Tag Creation message.
- Withdraw messages must not be sent for requests that have already reached a final state (IMPLEMENTED, DEAD, etc.).
- Withdraw messages may be sent for ATF Requests that have a Request State of PENDING.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- The Request State is set to WITHDRAWN.
- WITHDRAWN is a final Composite State.

### **2.6.3.3 Cancelling an e-Tag**

The following procedure should be used to cancel an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The message must include the original

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Security Key for the transaction that was used in the e-Tag Creation message.  
Specify the termination time as the Tag Start Time of the e-Tag.

- RequestTerminateTag messages must only be sent for e-Tags with a Composite State of CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag message must contain a termination start time that is equal to the Tag Start Time (if it is later it could only transition to TERMINATED).
- Only CONFIRMED e-Tags may transition to CANCELLED e-Tags.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Upon cancellation, all pending requests for the cancelled e-Tag are set to a Request State of DENIED.
- CANCELLED is a final Composite State.

### 2.6.3.4 *Terminating an e-Tag*

The following procedure should be used to cancel or terminate an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the Request ID provide by the Authority Service at the time the request was made and the desired termination time. The termination message must also include the original Security Key for the transaction that was used in the e-Tag Creation message.
- RequestTerminateTag messages are only valid for requests that have reached the state of CONFIRMED, IMPLEMENTED, or TERMINATED.
- RequestTerminateTag messages may be used for IMPLEMENTED ATF e-Tags.
- Termination of a TERMINATED e-Tag may only change the termination time to an earlier time than the last approved RequestTerminateTag Request.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Once approved, the Composite State of the e-Tag becomes CANCELLED or TERMINATED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.
- Both CANCELLED and TERMINATED are final Composite States.

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- It is acceptable to terminate an e-Tag multiple times, assuming that the termination time of each termination message is earlier than the termination time of the prior termination messages.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with block end time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, are set to a Request State of DENIED.

### 2.6.4 Information Distribution

#### 2.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Approval State Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 2.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Agent Service receives a Request Resolution Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent Service
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the New e-Tag Request to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

When a Request is resolved to a state of APPROVED, then it should be considered complete and the Request data should be applied to the e-Tag. When a Request is resolved to WITHDRAWN, DENIED, or EXPIRED the data in the Request should be disregarded.

#### 2.6.4.3 *Processing a Potential TLR Profile Change Distribution*

The following validation criteria must be checked when an Agent Service receives a Potential TLR Profile Change Distribution message:

- The e-Tag IDs Referenced in the message must be held by the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

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Agents may elect to verify the validity of the Potential TLR Profile Change Distribution. To do this, the Agent Service must send a Callback message to the RA Service that issued the Potential TLR Profile Change Distribution. The Callback must contain the same Security Key presented to the Agent Service as part of the original TLR Profile Change Distribution message. If the Agent Service is unable to connect to the RA Service or if the RA Service replies with a Fault, the Agent Service should attempt to retry the message, as described in section 7.1.1.1.

### 2.6.5 Query Functions

#### 2.6.5.1 Synchronous Queries

Synchronous Queries include the following:

- Query e-Tag
- Query RequestIDs
- Query Request
- Query State
- Query Availability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

##### 2.6.5.1.1 Query for an e-Tag

Agent Service must specify a valid e-Tag ID and the associated Security Key they used to submit the original New e-Tag Request.

##### 2.6.5.1.2 Query for Request IDs

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request. Optionally, the user may elect to filter Request ID's based on the resolution of the requests associated with the e-Tag (i.e., show only IMPLEMENTED Requests).

##### 2.6.5.1.3 Query for a Request

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID they wish to retrieve.

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### 2.6.5.1.4      Query for a Request's State

Agent Service must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID for the desired State information.

### 2.6.5.1.5      Querying for System Availability

Agent Service must specify a particular system for which to query availability - by both entity desk and service (Agent, Approval, Authority, or RA Service).

Agents should respond back to queries for system availability as follows:

- If the Agent Service is operating correctly, the Return Value should be SUCCESS.
- If the Agent Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Agent Service should indicate that error.

### 2.6.5.2      Asynchronous Queries

Asynchronous queries include the following:

- Query Summaries
- Query e-Tags
- Query History

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message from the Authority Service. The response message will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Agent Service's registered URL, and will include the same Security Key used by the Agent Service to submit the query. The Agent Service should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 2.6.5.2.1      Query Summaries

Agent Service must specify either an Active Range or a Last Modified Range for which the e-Tag summaries should be returned. The Active Range is used to specify a range of time during which an e-Tag must have been "active" (i.e., start or end date/time of the e-Tag falls within the Active Range). The Last Modified Range is used to specify a range

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of time during which the e-Tag had a Request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When an Approval or Agent Service requests recovery over an outage range, the service must create a list of unique URLs for Authority Services and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority Service's companies is listed as the intended message recipient.

Agent Service must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Agent Service creates a Query Summaries message:

- The rules described in the Data Model and Method Descriptions section must not be violated
- The Range specified must not exceed twenty-five (25) hours. Authority Services are only required to provide 25-hours of information in response to any single query.

The following validation criteria must be checked when an Agent Service receives a Query Summaries Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the original Security Key provided at the time the Agent Service transferred the Summaries Query to the Authority Service

### 2.6.5.2.2 Query e-Tags

The Agent Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. The Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing Security Keys can be recovered using the Query Summaries message. The user must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query

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- The Security Key presented must be identical to the original Security Key provided with the original query

### 2.6.5.2.3 Query History

Agent Service must specify a valid e-Tag ID and Security Key. The Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the Security Key provided by the Authority Service through a Distribute message. Missing Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Agent Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.7 Availability and Performance

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

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# Section 3 - e-Tag Authority Service Functional Requirements

## 3.1 Introduction

All entities responsible for performing the Balancing Authority (BA) function shall provide the necessary hardware, software, and/or services to implement the Authority Service. The Authority Service shall comply with all functional requirements set forth in this section. BAs may elect to comply with these Authority Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Authority Service shall provide facilities to:

- Accept as input e-Tag data transferred in compliance with this document from any Agent Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly.
- Identify all entities having approval rights over the transaction request, and transfer the request to the associated Approval Services for evaluation
- Identify all entities entitled to an informational copy of the transaction request, and transfer the request to the associated Agents and Approval Services.
- Manage each request's approver's Approval States and overall Request State based on communication with the Agent and Approval Services.
- Verify the identity of each approval entity attempting to approve or deny a Request based on the presented e-Tag ID and Security Key, and update the entity's Approval State and the Request State, as appropriate.
- Provide facilities for overriding Approval States on the behalf of an Approving entity.
- Verify the identity of each requesting entity attempting to make a request based on the presented e-Tag ID and Security Key, and create the Request as appropriate.
- Generate notification messages to Approval and Agent Services as appropriate.
- Respond to inquiries for transaction information made by Agent or Approval Services.
- Store all e-Tags, to be available for on-line querying and access, for at least ninety (90) days after the stop date/time in the e-Tag.

Information systems designed to provide more than one e-Tagging service (e.g., Authority and Approval Service) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

## 3.2 Registry Usage

The Authority Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. The list of all such entities shall be maintained and available for downloading from the EIR web site. The Authority Service

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shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be in a format defined in a document posted on the EIR vendor's web site.

Each BA shall provide the necessary information to identify in the EIR who serves as their Authority Service when that particular BA is referenced as the Sink BA in an e-Tag.

### **3.3 Tag Data Entry and Viewing**

The Authority Service is primarily an automated manager of data that should require little manual intervention. However, certain events may require user interaction. To this end, the Authority Service shall provide a mechanism for a user to view e-Tag requests and **directly modify/override entity Approval States**, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all information (as described in this document) contained in a valid e-Tag.

#### **3.3.1 Approval State Override**

As required above, Approval States may be overridden by the Authority Service Operator. Such overrides must occur within the normal bounds of the state management logic:

- Approval States cannot be overridden for requests that have already reached a final state (i.e., IMPLEMENT, CANCELLED, etc.)
- Overrides must be treated exactly the same as if the approver had set the Approval State (i.e., if a state setting would normally move the Request to a state of IMPLEMENT, then an override to the same state must have the same result).

The ability to override Approval States must only be utilized in the event that the entity whose state is being overridden has requested the Authority Service Operator to do so due to communication or system failure.

#### **3.3.2 Security Keys**

The Authority Service shall be responsible for managing Security Keys associated with e-Tag requests. Security Keys for Agent Services are chosen by the Agent Service itself; all other Security Keys (with the exception of the IDC Security Key described below) are assigned and managed by the Authority Service.

Each Authority Service shall be assigned a unique IDC Security Key to be used when communicating with the IDC. All communications with the IDC must use this IDC Security Key in order to be considered valid. The IDC will reject any messages without a valid IDC Security Key. The IDC e-Tag Key must be considered confidential.

### **3.4 Date and Time Handling**

The Authority Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid

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times during the day shall be from 00:00:00 to 23:59:59. E-Tag start and stop times must be on a minute boundary. The Authority Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Authority Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

The Authority Service must calculate the latest approval time in order to determine when to end the approval period and set the final Request State of an e-Tag. The absolute date/time by which an e-Tag may be approved is calculated based on a combination of the NERC/NAESB timing tables and the application of the start ramp duration defined in the first profile block in the e-Tag and Tag Start Time. If the first energy profile block in the e-Tag does not contain a ramp duration or if the first energy profile block does not start at the Tag Start Time, then default ramp durations should be used. Default ramp durations are defined in NAESB WEQ-004-17. The default ramp durations must be used in conjunction with the NERC/NAESB timing guidelines to determine the absolute time limit for approval in the absence of a ramp duration supplied by the e-Tag Author.

The ramp type for all interchanges between balancing authorities is a straddle ramp. Straddle ramps divide the start ramp duration equally across the profile Block Start Time and divide the end ramp duration equally across the profile block end time. When the e-Tag contains multiple profile blocks, the ramp duration in the profile block's ramp start duration is used to calculate ramp start time and instantaneous MW levels. The ramp end duration is ignored in all profile blocks except for the last profile block where it is used to calculate the ramp end time and instantaneous MW levels. The ramp start time can be determined by dividing the ramp duration by two and subtracting it from the profile Block Start Time. The start time derived from the first profile block is used to determine the point at which the e-Tag transitions from CONFIRMED to IMPLEMENTED. The ramp continues from the ramp start time across the profile Block Start Time to the ramp duration minutes divided by 2 after the profile Block Start Time.

The default ramp duration for reliability adjustments is ten minutes for all interconnections. Ramp rates may be optionally supplied by the entity requesting the profile change. When a reliability adjustment is made, it may result in the creation of additional profile blocks. The ramp durations of the profile blocks will need to be adjusted in this case with the ramp start duration of the adjusted block being set to ten minutes or the supplied start ramp duration and the rest of the ramp start durations (and end duration in the final block if applicable) remaining with their associated profile blocks.

### **3.5 Data Validation**

The Authority Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

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### **3.6 Function Implementation**

The Authority Service is responsible for being able to call the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributeTerminateTag
- CallbackSummaries
- CallbackTags
- CallbackHistory

And process the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- Query Availability

Semantics, including calling and processing rules are described in detail in the following sections.

The Authority Service is also responsible for Request State Management, as described in section 1.3.4.2 and 1.3.4.3. Passive State settings due to time elapse are also the responsibility of the Authority Service.

#### **3.6.1 Initiating a Request**

##### **3.6.1.1 Processing a New e-Tag Request Submission**

The Security Key presented with the Request e-Tag message will be used by the Authority Service for all future messages from/to the e-Tag author for this e-Tag. Authority Service must compare the e-Tag's start time or calculated ramp start time to the timing tables in the NERC/NAESB Standards. The e-Tag is assigned a Time Classification of LATE, ATF, or On-time as per those tables. All request start and stop times must be on a minute boundary. E-Tags submitted after the Tag Stop Time (as

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determined by the time of receipt at the Authority Service) must be considered to be ATF and designated as such. The corresponding enumeration must be set by the Authority Service and must be persistent, reset only if e-Tag Author makes a correction.

The following validation criteria must be checked when an Authority Service receives a Request e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the Authority Service
- If a Transmission Segment's POR or POD is listed as a DC Tie facility, then the associated BA for that DC Tie must be listed as a SE for that Transmission Service Provider.
- A New e-Tag Request may not create an e-Tag that starts more than 168 hours in the past.
- An ATF e-Tag must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the SE field is missing, the Authority Service must ensure that a BA code that is identical to the Transmission Service Provider code exists. If no BA code identical to the Transmission Service Provider code is found, the Request's delivery state is set to Invalid.

Once an e-Tag Creation request passes validation, the Authority Service must store the e-Tag in its local data store and identify it as a Pending Request. In so doing, it must generate the appropriate "Current Level" profile. The initial Current Level profile must be stored by the Authority Service if In-Kind losses are specified so it may later be used for loss accounting, replaced only when Market Level profile change requests are approved. For each supplied base profile, the *Current* base profiles will be generated. For all transactions and all profiles, the Current Level is equal to the specified Market Level.

The Current Level profile should not be distributed, but rather derived based on all approved Requests associated with a particular e-Tag, processed in order of receipt by the Authority Service.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

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The Authority Service must then build the distribution table for the e-Tag. Details follow in the section below. Once the distribution list has been determined, the Authority Service must distribute the e-Tag to the appropriate parties.

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### 3.6.1.1.1 Identifying the Distribution List

The Authority Service must determine the distribution list for an e-Tag. The distribution list is comprised of the following entities as listed on the e-Tag:

- The e-Tag Author
- The Generation Providing Entity (Merchant)
- The Load Serving Entity
- All Purchasing Selling Entities (Title Holders) in the Financial Path
- All Transmission Customers
- The Balancing Authority in which the generation is located (Source BA)
- The Balancing Authority in which the load is located (Sink BA)
- All Transmission Service Providers
- All Scheduling Entities for those Transmission Service Providers
- All Reliability Coordinators listed in the Electric Industry Registry as being associated with the Source BA, Sink BA, and intermediate BAs.
- All entities contained in the CC list.

In order to determine a Service URL for the above entities, the following rules must be used:

- For GPEs, LSEs, and Transmission Customers, there will be potentially two entries. The first Service URL will be the entity's registered URL for their Agent Service. The second Service URL will be the entity's registered URL for their Approval Service.
- For intermediate PSEs, the Service URL will be the entity's registered URL for their Agent Service.
- For all other entities, the Service URL will be the entity's registered URL for their Approval Service.
- For the GPE, LSE, and Transmission Customer, approval rights may be held, delegated, or waived. When holding rights, the Service URL is based on the registered approval URL for that entity. When delegating rights, the Service URL is based on the approval URL of the alternate entity specified for the specific source/sink in the e-Tag; this delegation always supersedes that specified as the registered approval URL for the GPE/LSE/TC. If the delegated entity is not already in the distribution list, the entity must be added. When waiving rights, the entity will have explicitly not listed an approval service in their registration or that of the source/sink.
- Entities identified in the CC list must not be given approval rights though the e-Tag may be distributed to the entities registered URL for their Approval Service as described in section one of this document.

In addition, the messages, including callbacks, must be sent to the Secondary Service URL registered to any PSE, BA, or Transmission Service Provider in the distribution list.

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~~This does not apply to any URL that matches a Service URL. These forwarded messages shall not impact the Delivery State of the associated entity.~~ [p4]

No duplicate entities may be in the distribution list. A duplicate is defined as entities sharing the same Tagging Entity ID, Service Type (i.e., Agent, Approval, or Authority), and Service URL. Any entity that does not have a registered Service URL shall be removed from the distribution list, and any approval rights waived. Each entity will have a record in the list, identifying their Service URL for the transaction. A record in the list should have the following general format:

TAG ID	REQUEST ID	TAGGING ENTITY ID	SERVICE TYPE	SERVICE URL
--------	------------	-------------------	--------------	-------------

### 3.6.1.2 *Processing a Correction Request Submission*

The following validation criteria must be checked when an Authority Service receives a Request Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security key presented must be identical to the key presented to the Authority Service at the time the e-Tag was originally submitted by the Agent Service.
- Only the e-Tag Author or Transmission Service Provider may issue a correction
- Corrections are only allowed for e-Tags that are in a PENDING state.
- Only certain items may be corrected on an e-Tag. Specifically, the following are NOT allowed:
  - Addition or removal of any entity from the transaction path (both financial and physical)
  - Changes to the energy profile (changes to the transmission allocations are acceptable)
  - Reassignment of a Transmission Allocation to a new physical segment
  - Addition or Removal of any Scheduling Entity
- Transmission Service Provider authored corrections may only change the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider. The total transmission allocation MWlevel may not be changed (increased or decreased) for any period. Extensions are prohibited.

Once a Correction Request passes validation, the Authority Service must recompute ActOnByTime and TimeClassification using the correction's submission time in place of the e-Tag submission time and following the rules from the NERC/NAESB Standards timing tables. For Transmission Service Provider authored Correction Requests, since no approval process is required, the Authority Service must assign the same values active for the e-Tag for the ActOnByTime and TimeClassification. The Authority Service must then assign an incremental unique number to the correction, and each item being

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corrected must be updated to reflect this number. The first correction must be considered correction ID one (1). The response must contain references to the versions of the corrected segments.

The Authority Service must REPLACE the data in its current store with the new correction data. Any entity impacted by the correction (as defined in Section 1.6.2) must have their Approval State reset to PENDING and be informed of the change through Correction Request Distribution.

### **3.6.1.3            *Processing a Profile Change Request Submission***

The following validation criteria must be checked when an Authority Service receives a Request Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- Profile Change Requests are only allowed for e-Tags that have been CONFIRMED or IMPLEMENTED
- Profile Change Requests may only change hours that are at the EARLIEST one (1) hour in the past. Dynamic tags are an exception to this rule (they may be changed up to 168 hours in the past).
- Profile change requests may not be made to extend an e-Tag once the e-Tag's profile has been completed (i.e., current time is equal to or later than the last date/time specified in the e-Tag).
- Reliability Limits may be set and cleared for any duration.
- Only certain entities may change certain profile values.
- Reliability Limits may specify the applicable BaseProfileID. The default location of the limit is at the Source BA (formerly referred to as GCA) (BaseProfileID 1).
- Profile change requests, including DYNAMIC type e-Tag ATF adjustments, made by the e-Tag author will use the source profile for loss calculations and will replace the profile stored on the Authority Service for use in loss calculations once the Request has reached a CONFIRMED or IMPLEMENTED state.
- Reliability Limits and Transmission Allocation may not be changed for DYNAMIC e-Tags more than one hour in the past (but may be cleared).
- All applicable validations required in NERC INT-007-1 must be performed.
- Transmission Service Provider Market Profile changes may only impact the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider.
- Transmission Service Provider Market Profile changes may not reduce or increase the total transmission allocation MWlevel for any period. Extension is prohibited.

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- Transmission Service Provider Market Profile changes cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.
- Profile change requests may not add or remove any entity.

Upon receipt, the Authority sets the ActOnByTime and TimeClassification based on the time of receipt and the timing table in the NERC/NAESB Interchange Standards. Transmission Service Provider Market Profile changes to the Product Code or Transmission Allocation requires no approval process therefore ActOnByTime should be set to the time of receipt and TimeClassification should be set to On-time.

If the Request changes the reliability limit, then the Authority Service must calculate the correct MW values to use for all profiles except for the source profile (which is included in the Profile Change message). The source profile will be associated with a physical location (BaseProfileID). If no physical location is included in the Profile Change message then the Authority Service will default the location to the Source BA (formerly referred to as GCA). The value of each profile calculated below must use the location information to calculate the correct profile values for both upstream and downstream profiles. The value of the profile at the physical segment specified in the Profile Change message will be the same as the source profile. The process for calculating upstream and downstream profiles is done in three steps:

### Loss Percentage Step

The first step is to calculate the Loss percentage supplied by the creator of the original e-Tag based on the current Market Level. This is done by applying the specified formula, for the day the curtailment is effective.

$$LossPercentage = \frac{TotalDailyMWhPOR - TotalDailyMWhPOD}{TotalDailyMWhPOR}$$

### Carry Forward Step

To minimize overpayments or underpayments when calculating the POD Megawatt profile under a curtailment a CarryForward concept is used to ensure that the delivering party is not over-charged with losses for the transaction. The starting value of CarryForward will always be zero. Afterwards, the CarryForward value must be re-calculated each hour or part of an hour for which a new curtailment has been applied to the profile.

$$CarryForward_N = 0$$

### New Limit Step

$$NewLimit_N = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage)$$

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After the first calculation of the NewLimit, a CarryForward will exist and should be calculated as:

$$\text{CarryForward}_{N+1} = \text{RoundUP}(\text{SpecifiedLimit} * \text{LossPercentage}) - (\text{SpecifiedLimit} * \text{LossPercentage})$$

Afterwards, curtailment should use the CarryForward value to calculate the new limit as:

$$\text{NewLimit}_{N+1} = \text{SpecifiedLimit} - \text{RoundUP}(\text{SpecifiedLimit} * \text{LossPercentage} - \text{CarryForward}_{N+1})$$

Example:

Daily MWh POR = 100 MW  
Daily MWh POD = 97 MW  
SpecifiedLimit (Curtailed to) = 50 MW

$$\text{LossPercentage} = \left( \frac{100 - 97}{100} \right) = 0.03$$

$$\text{CarryForward}_{N_0} = 0$$

$$\text{NewLimit}_{N_0} = 50 - \text{RoundUp}(50 * 0.03) = 50 - 2 = 48$$

$$\text{CarryForward}_{N+1} = \text{RoundUp}(50 * 0.03) - (50 * 0.03) = 2 - 1.5 = 0.5$$

Second Curtailment occurs to 40 MW

$\text{NewLimit}_{N+1} = 40 - \text{RoundUp}(40 * 0.03 - 0.5) = 40 - \text{RoundUp}(.7) = 39$  If a Reliability Limit clearing is applied, then reliability limits for all periods following the start of the clearing through the end of the clearing are set to null and the limits erased.

Once the downstream reliability profiles have been created, the Authority Service must generate the appropriate Current Level exception profiles. The exception profiles must only reflect the hours changed, NOT the entire transaction. The current *exception* profile will always be generated based on the following rules:

### **For PSE-Originating Market Changes:**

*For each supplied Exception Profile*

- The Exception Current Level is set to the lesser of the effective Reliability Limit for the profile and the Exception Market Level. Effective Reliability Limit is defined as the current Exception Reliability Limit if one exists; if none exists, then the Reliability Limit is assumed to be infinite.

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### **For Source BA/Transmission Service Provider/Sink BA-Originating Reliability Changes:**

*For Generation Profiles:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the specified Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level.

*For each POR, POD, and Load Profile:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the previously calculated Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level Exception

For any Exception Profile where the Current Level is equal to the Base Current Level, the Exception Profile must be eliminated. This is intended to reduce redundant data exchange.

### **Additional Implementation Details**

It is possible for an e-Tag Author or Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules must be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. In so doing, a new reservation allocation and new Base Profile will be added. The reservation allocation will NOT be added as an exception allocation, as no previous base exits to be modified.
- Should an e-Tag Author need to modify an allocation, the changes must be specified in the same manner in which profile change or extension would be processed. For example, if a request was made to have a transaction for an additional hour, and the requestor desired to use the same reservation that was used for the previous hour, an allocation exception would be inserted that specified the additional hour.
- Transmission Service Providers may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- Transmission Service Provider transmission allocation adjustments cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest

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possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

Following this modification of the allocation the ChangeRequest is distributed to all appropriate parties.

### 3.6.2 Request Distribution

The following procedure should be used when sending Request Distribution messages:

- Encode the new Request in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the intended recipient of the distribution message
- If the submission fails or the response contains fault messages, attempt to resend the message using the process described in section 7.1.1.1.
- Set the delivery status to an appropriate value indicating whether or not the message was successfully delivered to the intended recipient. Appropriate values are DELIVERED (no errors), COMMFAIL (couldn't contact the message recipient) and INVALID (an error was returned by the message recipient)

#### Identifying the Entities with Approval Rights

Some of the entities in the Distribution List will have Approval Rights over the various requests, while others will have only viewing rights. The rules for determining who has Approval Rights to each Request are defined in Section 1.6.2.1 of this document.

The Authority Service will need to maintain a RequestApprovalRights list for each e-Tag. This list will be used in generating the appropriately formatted distribution messages for delivery to the various distribution entities. The list will also be used to store local State information about each entity. Each entity will have a record in the list, defining their Delivery State, Approval State, and State Type. Initial delivery state (before delivery has been attempted) should be set to PENDING. A record in the list should have the following general format:

TAG ID	REQUEST ID	ENTITY CODE	DELIVERY URL	DELIVERY STATE	APPROVAL STATE	STATE TYPE
--------	------------	-------------	--------------	----------------	----------------	------------

Each Request requiring Approvals (New e-Tag Request, Profile Change Request) must have a data set of this type associated with it. Entities with Approval rights will have their Delivery State set to QUEUED, their Approval State set to PENDING, and their State Type set to NA.

Entities without Approval Rights will have their Delivery State set to QUEUED, their Approval State set to NA, and their State Type set to NA.

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An entity authoring a Request will be assumed to have implicitly approved that Request and as such, will have their Delivery State set to QUEUED, their Approval State set to APPROVED, and their State Type set to ACTIVE. The entity will, however, retain rights to set their Approval Status (i.e., if they wish to deny their own Request, they may do so).

Entities with Approval Rights on a Request are specifically instructed to take action on the e-Tag through the use of the ApprovalRights flag.

### **3.6.2.1**            *Distributing a New e-Tag Request*

Distribution of a New e-Tag Request is handled as described in Section 3.6.2.

### **3.6.2.2**            *Distributing a Correction Request*

Distribution of a Correction Request is handled as described in Section 3.6.2.

For entities impacted by the Request, the Authority Service must set the IMPACT flag to TRUE. For entities not impacted by the correction, the IMPACT flag must be set to FALSE.

### **3.6.2.3**            *Distributing a Profile Change Request*

All distributions must include the market levels or reliability limit profiles for that period. Distribution of a Profile Change Request is handled as described in Section 3.6.2. If a Reliability Limit clearing is being requested, then that limit clearing must be distributed to all entities.

## **3.6.3 Request Actions**

### **3.6.3.1**            *Processing Request Approvals and Denials*

The following validation criteria must be checked when an Authority Service receives a Request Approval or Denial message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag Id presented must represent an e-Tag currently held by the Authority Service
- The Request ID presented must represent a Request currently held by the Authority Service
- The Security Key presented must be identical to the key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The entity attempting to set State must be one of the entities having approval rights over the Request.
- An Author of the State Setting must be specified
- State Settings are only allowed for Requests that are not in a final state.

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- State Settings of DENIED or STUDY must be accompanied by reasons that explain why the specific state was chosen

Once a Request Approval message passes validation, the Authority Service must store the State in its local data store and use it to identify when the Request's Approval State should be updated. The State Type must be marked as ACTIVE. If a denial or study, the State information must be distributed to all parties.

In certain cases, the Authority Service Operator may be obligated to override a State request on the behalf of another entity. Should this situation occur, the new State must be recorded and the State Type set to "OVERRIDE."

### **3.6.3.2 Processing a Withdraw Request**

The following validation criteria must be checked when an Authority Service receives a Withdraw Request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service
- The Request ID presented must represent a Request currently held by the Authority Service
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The entity attempting to Withdraw must be the Author of the Request.
- A Withdrawal is only allowed for a Request that is PENDING
- Withdraw Requests may be submitted for ATF Requests that have a Request State of PENDING

If the Request State of the Request is PENDING, then the Authority Service must set the Request State of the Request to WITHDRAWN and distribute a DistributeStatus message as required in section 3.6.4.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

WITHDRAWN is a final state.

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### **3.6.3.3 Processing a Terminate Request**

The following validation criteria must be checked when an Authority Service receives a RequestTerminateTag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- RequestTerminateTag requests are only allowed for e-Tags that are CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag request must contain a termination time that is between the Tag Start Time and Tag Stop Time, and later than the time of receipt.
- A RequestTerminateTag request is invalid if it requests a start time that is later than or equal to an existing RequestTerminateTag Request for the same e-Tag; however, a request for an earlier termination time is allowable.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with Block Stop Time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, must be set to a Request State of DENIED.

The Authority Service must distribute a DistributeTerminate message as defined in 3.6.1.1.1. The Request is subject to the same approvals as a new adjustment request. The Authority Service sets the ActOnByTime based on the receipt time of the message and the NERC/NAESB Interchange Standard timing tables. This will also include calculation of ramp start time. The Authority Service also sets the TimeClassification based on the NERC/NAESB Interchange Standard timing tables and the termination time. If the Request State becomes APPROVED, the Authority Service's action depends on the termination time.

- If the termination time is equal to the Tag Start Time of the e-Tag, then the Authority Service must distribute a DistributeResolution message that sets the Composite State of the e-Tag to CANCELLED.
- If the termination time is after the Tag Start Time of the e-Tag, then the Authority Service must set the market level profiles and transmission allocation profiles of the e-Tag to zero starting at the termination time, and distribute a DistributeResolution message that includes the time at which the Authority,

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Approval, and Agent Services will set the e-Tag's Composite Status to TERMINATED. This is called the TerminationTime.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

CANCELLED and TERMINATED are final states.

### 3.6.4 Information Distribution

Whenever a significant status event occurs as defined below, or a Request Resolution occurs, the Authority Service must notify all parties on the distribution list of the e-Tag regarding the change. This notification aids in coordination and communication between the various entities involved with the transaction. These notifications follow the same procedure used by the other Request Distribution messages, described in section 3.6.2.

#### 3.6.4.1 *Distribution of Request Approval State*

A significant status event (an event triggering a State Distribution) is defined as one of the following:

- An Approver sets their State to DENIED, STUDY or APPROVED
- The Authority Service sets a Delivery state to INVALID or COMMFAIL

The distribution must contain the State of ALL entities with approval or viewing rights over the Request.

When a distribution is triggered, the Authority Service must wait five (5) seconds to verify no other changes are made to the States associated with the Request. If such changes are made, the distribution must be updated to include those changes. If the Denial or Study is overridden to APPROVED, the distribution must be aborted.

Distribution of a Request Approval State is handled as described in Section 3.6.4.

#### 3.6.4.2 *Distribution of Request Resolution*

The events triggering a Request Resolution Distribution are as follows:

- All Approvers have set their State to Approved, or
- The time for approval of the Request expires, or
- A requester withdraws the Request.

Given the above events, the following rules apply to determining the resolution of the Request:

- If a requester has withdrawn the Request, the Request is WITHDRAWN.
- If all approvers have set their State to Approved, the Request is APPROVED and the Composite State is CONFIRMED.
- If time has expired and any Approver' current State is DENIED, the Request is DENIED.

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- If time has expired, and no Approver's current State is DENIED, and all Reliability Entity's current State is APPROVED, the Request is APPROVED.
- The individual status of any Market Entity whose current State is PENDING will be set to APPROVED and the Type will be set to PASSIVE when the Request State of the Request is APPROVED.
- If time has expired, and any Reliability Entity's current State is EXPIRED (or PENDING), the Request is EXPIRED.

When the Authority Service distributes a Request Resolution for a New e-Tag Request where the Composite State of the e-Tag is transitioning to CONFIRMED, the Authority Service must calculate and distribute the "ImplementTime" so that all Agent and Approval Services know when the Authority Service is planning to make the transition from CONFIRMED to IMPLEMENTED.

Distribution of a Request Resolution is handled as described in Section 3.6.4.

### **3.6.4.3 Potential TLR Profile Change Distributions**

The Authority Service has no requirements with regard to the warning message titled Distribution of Potential TLR Profile Changes.

## **3.6.5 Recovery Functions**

### **3.6.5.1 Processing Synchronous Queries**

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to process all synchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation return the requested data. Otherwise return a fault or error message

#### **3.6.5.1.1 Processing an e-Tag Query**

The following validation criteria must be checked when an Authority Service receives a Query e-Tag message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag

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Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.

- The rules described in the Data Model and Method Descriptions sections must not be violated.

### 3.6.5.1.2 Processing a Request Ids Query

The following validation criteria must be checked when an Authority Service receives a Query Request Ids message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Request IDs Query message passes validation, the Authority Service should return the requested data ordered by Request State and then by Request creation time (oldest to most recent).

### 3.6.5.1.3 Processing a Request Query

The following validation criteria must be checked when an Authority Service receives a Query Request message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 3.6.5.1.4 Processing a Request State Query

The following validation criteria must be checked when an Authority Service receives a Query Request State message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-

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Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.

- The rules described in the Data Model and Method Descriptions sections must not be violated

### 3.6.5.1.5 Processing Queries for System Availability

Authority Services should respond back to Queries for System Availability as follows:

- If the Authority Service is operating correctly, the Return Value should be SUCCESS.
- If the Authority Service is not operating correctly, the Return Value should be FAIL.
- If a known error Service is occurring, the Authority Service should indicate that error.

### 3.6.5.2 Processing Asynchronous Queries

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to process all asynchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation, queue the Request for further processing and return a success response, otherwise return a fail response.
- Periodically read and process all queued queries. For each query, send a new (callback) message to the registered URL of the party that submitted the query. The callback message should contain the data that was requested by the previous Query message.
- If the callback message fails or encounters a fault response, attempt to resend the message using the process described in section 7.1.1.1.

Asynchronous responses must start within five minutes of query receipt.

#### 3.6.5.2.1 Processing e-Tag Summary Queries

The following validation criteria must be checked when an Authority Service receives a Query e-Tag Summary message:

- The Range specified for the query must not exceed twenty-five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 25 hours of information.
- The rules described in the Data Model and Method Descriptions sections must not be violated

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Once an e-Tag Summary Query message passes validation, the Authority Service should return the requested data ordered from oldest to most recent based on the users search criteria (Date Active or Date Modified). The Security Key used for the callback message should be the same Security Key that was used when the e-Tag Summary Query message was submitted.

When an approval or agent service requests recovery over an outage range, the service must create a list of unique URLs for Authority Services and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority Service's companies is listed as the intended message recipient.

### 3.6.5.2.2 Processing an e-Tags Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tags message:

- The e-Tag Ids presented must be held by the Authority Service
- The e-Tag Keys associated with those e-Tag Ids must be valid keys associated with those e-Tags and with the querying entity
- The Return Rate must be greater than zero (0)
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Query e-Tags message passes validation, the Authority Service should return the requested data ordered by e-Tag creation time from oldest to most recent. Each callback message should contain one or more e-Tags, but not more than the number of e-Tags specified in the Return Rate field of the Query e-Tags message. Each message may contain fewer than the requested number of e-Tags. The Security Key used for the callback message should be the same Security Key that was used when the e-Tag Summary Query message was submitted.

### 3.6.5.2.3 Processing an e-Tag History Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tag History message:

- The TagID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the queried e-Tag. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.

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- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Authority Service should return all data to the caller, regardless of the message delivery status, except for retry messages (which should never be returned).

Once a Query e-Tags message passes validation, the Authority Service should return the requested data ordered by Call Time Stamp (oldest to most recent).

### **3.7 Availability and Performance**

The Authority Service must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, the Authority service must provide, at a minimum, the following:

- Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);
- Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);
- Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc.).

Providers of Authority Services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.

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# Section 4 - Approval Service Functional Requirements

## 4.1 Introduction

All entities that may have “approval rights” over any Interchange Transaction shall provide the necessary hardware and software systems to implement the Approval Service. The Approval Service shall comply with all functional requirements set forth in this section. Approval entities may elect to comply with these Approval Service requirements using internally developed hardware/software; third party developed hardware/software, or third party subscription type services.

Approval shall be responsible for providing the following functions:

- Accept input e-Tag data transferred in compliance with this document from any Authority Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly (i.e., provide for positive acknowledgement of receipt of the e-Tag).
- Communicate approval, denial, study, and adjustment information to the Authority Service managing the e-Tag in compliance with this document.
- Receive notification messages from the Authority Service.
- Query the appropriate Authority Service for the current State of each Request submitted for approval.

Information systems designed to provide multiple e-Tagging services (e.g., Authority and Approval Services), are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging related services provided by (or for) others.

## 4.2 Registry Usage

The Approval shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers, BAs, and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A listing of all such entities shall be maintained and available for downloading from the EIR web site. The Approval Service shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be maintained in a format defined by the NERC/NAESB Joint Electric Scheduling Subcommittee.

The Approval Service must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

## 4.3 Tag Data Entry and Viewing

The Approval Service is the main interface through which entities with approval rights to an e-Tag alert the e-Tag author and each other of their decisions to approve, deny, or

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change an e-Tag to reflect a valid representation of a scheduled transaction. To this end, the Approval Service shall provide a mechanism for a user to view, make changes, or modify the entity state(s), as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all transaction related information (as described in the Data Model) necessary to represent a complete, valid e-Tag.

### **4.4 Date and Time Handling**

The Approval Service shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. The Approval user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Approval Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### **4.5 Data Validation**

The Approval Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **4.6 Function Implementation**

The Approval Service is responsible for being able to call the following methods:

- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeTerminateTag
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- CallbackSummaries
- CallbackTags

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- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

### 4.6.1 Initiating a Request

The Approval Service may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 4.6.1.1 *Submitting a Correction Request*

Write Request – Transmission Service Providers may submit e-Tag correction(s) if needed. The Transmission Service Provider must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to a TransProductRef must not only contain the TransProductRef, but also the Transmission Allocation ID, a reference to the Parent Segment, the OASIS Number, and the associated Transmission Customer.

The Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider (TPCode). The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation may not be changed (either reduced or increased)

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may only be made to e-Tags that are PENDING
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

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Should the Request not be valid, the Transmission Service Provider must be informed of the error(s) by the Approval Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Approval Service must record these numbers for later reference and integrity verification.

### **4.6.1.2 Submitting a Profile Change Request**

When requesting a setting of the reliability limit, the Approver may specify the profile at a specific physical segment. If the Approver does not specify a physical segment the default is the generator. The Authority Service will calculate the remaining profiles for all other upstream and downstream profiles. The Approver must provide any additional parameters necessary to successfully call the RequestProfileChange method. If requesting a clearing of reliability limits, the Approver must specify a start and a stop range for the clearing of the limit. Approval Services are not allowed to submit Current Level profiles, as they are calculated by the Authority Service.

The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...).

In some cases the Market Operators may specify Market Level Profile changes rather than Reliability Limit Profile Changes. Specifying a Market Level Profile Change is completely acceptable provided the entity is a registered Market Operator and the Profile Change Request would modify a transaction that sources or sinks in the Market Operator's Balancing Area(s). Such use of the Market Level profile must ONLY be used by the Market Operator when market conditions are setting the flow of the transaction; reliability concerns must still be handled through the use of the Reliability limit. Market Operators must provide full sets of profile changes (i.e., not only the profile at the Generator, but all profiles along the scheduling path as well).

In the case of DYNAMIC e-Tags, the Sink BA or Source BA may specify limit clearing and Market Level Profile changes. This is intended to allow the Sink or Source BA to set the energy level of the e-Tag to the metered (actual) interchange value. This type of modification is allowed ONLY for historic data up to 168 hours in the past. When any entity changes a market level, they must also supply all of the profiles in the e-Tag. Changes to the reliability limit, with the exception of limit clearing, must not be allowed for DYNAMIC e-Tags if they are for a period more than one hour in the past.

The Transmission Service Provider may also submit a Market Level Profile change and is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated Transmission Service Provider. The Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag

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Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) nor the earliest start and end times.

The following validation criteria must be checked when an Approval Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may only be made to e-Tags with Composite States of CONFIRMED or IMPLEMENTED
- Profile Changes are not allowed for ATF e-Tags (they may be terminated)
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Profile change requests may not add or remove any entity.

It is possible for a Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should the Transmission Service Provider need to modify a transmission allocation then the Transmission Service Provider must specify the change in the same manner in which profile change would be performed.
- The Transmission Service Provider may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- The adjustment cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

### 4.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

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- If the message passes validation and a Secondary Service URL is registered for the Approval Service, the valid message received by the Approval Service must be sent to its Secondary Service URL.[p5]

### **4.6.2.1 Processing a New e-Tag Request Distribution**

Verify Semantics – the following rules must be met in order to constitute a valid New e-Tag Request Distribution:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- A e-Tag with the ID presented must not already exist on the Approval Service
- An e-Tag designated as ATF must be clearly identifiable. The Approval Service user interface must be designed so that ATF e-Tags are differentiated/highlighted by color, text, or some other mechanism that ensures the e-Tag Approver is aware that the e-Tag is ATF.

### **4.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tag creation Requests that do not have an Approval State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Approval Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the e-Tag Approver that the correction has occurred, highlighting the correction for their inspection
- Immediately consider any previous approval action (setting the approval State of the affected entity to either APPROVED, DENIED, or STUDY) to be reset

### **4.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

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### 4.6.3 Request Actions

The following procedure should be used by Approval Services when taking actions on requests:

- Encode the message in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 4.6.3.1 *Approving and Denying Request*

The e-Tag Approver must indicate their decision to support or refute the Request. Valid Approval States are defined in Section 1.3.4.2. States of Denied and Study **MUST** be accompanied with reasons for the choice. States of Approved **MAY** be accompanied with reasons or comments. The Approver must specify the Request ID that is being acted upon, and must include their assigned Security Key in order for the SetState method call to be processed correctly.

The following validation criteria must be checked when an Approval Service sends a Set Approval State message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The SetState call may not reference any Request that has already been resolved (i.e. has a current final state).
- States of Denied and Study must be accompanied by a reason

#### 4.6.3.2 *Withdrawing a Request*

Approval Services may withdraw profile change requests.

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority Service at the time the request was made.
  - The original Security Key for the transaction that was used in the e-Tag Creation message.
- Withdraw messages must not be sent for requests that have already reached a final state (APPROVED, etc.).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.

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- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- WITHDRAWN is a final states for the Request.

### 4.6.4 Approval Service Information Distribution

#### 4.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Status message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service initially transferred the New e-Tag Request to the Approval Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 4.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service transferred the New e-Tag Request to the Approval Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 4.6.4.3 *Potential TLR Profile Change Distributions*

The Approval has no requirements with regard to the Distribution of Potential TLR Profile Changes.

### 4.6.5 Recovery Functions

#### 4.6.5.1 *Synchronous Queries*

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus

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- QueryAvailability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### 4.6.5.1.1 Query for an e-Tag

Tag approval service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request.

### 4.6.5.1.2 Query for Request Ids

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request. Optionally, the user may elect to filter RequestID's based on the resolution of the requests associated with the e-Tag (i.e., show only Activates Requests).

### 4.6.5.1.3 Query for a Request

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID they wish to retrieve.

### 4.6.5.1.4 Query for a Request's State

Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID for which they would like State information.

### 4.6.5.1.5 Query for System Availability

Approval Service must specify a particular system for which to query availability (by entity desk and service type (Agent, Approval, Authority, and RA Services)).

### 4.6.5.1.6 Processing Queries for System Availability

Approval Services should respond back to Queries for System Availability as follows:

- If the Approval Service is operating correctly, the Return Value should be SUCCESS.
- If the Approval Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Approval Service should indicate that error.

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### **4.6.5.2 Asynchronous Queries**

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag, or, for Query Summaries, identify a unique list (select distinct) of Authority Service URLs. Send the XML message(s) created during the first step to this/these URL(s) as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message(s) from the Authority Service. The response message(s) will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Approval Service's registered service URL, and will include the same Security Key used by the Agent Service to submit the query. The Agent should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### **4.6.5.2.1 Query Summaries**

The Approval Service must specify either an Active Range or a Last Modified Range for which they want e-Tag summaries to be returned. The Active Range is used to specify a range of time during which an e-Tag must have been active (i.e., either the first start date/time pair or the last stop date/time pair of the e-Tag is within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When either an Approval or Agent Service requests recovery over an outage range, the requesting service must create a list of unique Authority Services URLs and send the Query Summary messages to each Authority Service in order to retrieve all e-Tags for which that e-Tag Approval or Agent Service is a party. For Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the Authority Service's companies is listed as the intended message recipient.

The User must also generate and specify a Security Key with which the Callback can be secured.

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The following validation criteria must be checked when an Approval Service submits a Query Summaries message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Range specified must not exceed twenty-five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 25 hours of information.

The following validation criteria must be checked when an Approval Service receives a Query Summaries Callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the Approval Service transferred the Summaries Query to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.5.2.2 Query e-Tags

The Agent Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing Security Keys can be recovered using the Query Summaries message. The User must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

### 4.6.5.2.3 Query History

The Approval Service must specify a valid e-Tag ID and Security Key. The Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the Security Key provided by the Authority Service through a Distribute message. Missing Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Approval Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query

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- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

### **4.7 Availability and Performance**

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

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# Section 5 - Reliability Authority Service Functional Requirements

## 5.1 Introduction

RA Services are used by Reliability Coordinators (RCs) to identify transactions for curtailment, reallocation, and reloading. Functions of a RA Service with regard to Reliability Authority and operations are determined by the NERC IDC Working Group or other industry groups. The information below describes the role of a RA Service with regard to the e-Tag system.

## 5.2 Registry Usage

RA Services shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers, BAs, and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. A list of all such entities shall be maintained and available for downloading from the EIR web site. RA Services shall supply a procedure to allow updates from the EIR on demand or on a prescheduled interval. The EIR shall be maintained in a format defined by the NERC/NAESB JESS.

RA Services must support the receipt of unsolicited messages sent by Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the EIR and be capable of receiving e-Tag messages.

## 5.3 e-Tag Data Entry and Viewing

User Interface rules for RA Services are defined by the NERC IDC Working Group or other industry groups.

## 5.4 Date and Time Handling

RA Services shall be responsible for the conversion of all date and time related input fields to UTC prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. RA Services' user interfaces are free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the RA Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

## 5.5 Data Validation

RA Services shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

## 5.6 Function Implementation

The RA Service is responsible for being able to call the following methods:

- RequestProfileChange
- SetState
- DistributePotentialTLRProfileChange

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And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeResolution

Semantics, including calling and processing rules are described in detail in the following sections.

### 5.6.1 Initiating a Request

RA Services may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Authority Service URL associated with the Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 5.6.1.1 *Submitting a Profile Change Request*

The following validation criteria must be checked when a RA Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may **only** be made to e-Tags that have been CONFIRMED or IMPLEMENTED
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags, which must not affect points in time more than 168 hours in the past.

### 5.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

#### 5.6.2.1 *Processing a New e-Tag Request Distribution*

The following validation criteria must be checked when a RA Service receives a Distribute New e-Tag message:

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- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the RA Service

### **5.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when a RA Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that do not have a Composite State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

### **5.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when a RA Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

## **5.6.3 Information Distribution**

### **5.6.3.1 Processing of a Request Resolution Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the RA Service
- The Security Key presented must be identical to the NERC-assigned Security Key for RA Service communications.
- The rules described in the Data Model and Method Descriptions sections must not be violated

### **5.6.3.2 Distribution of a Potential TLR Profile Change**

*Note – The following actions describe the role of the NERC Interchange Distribution Calculator (IDC) with regard to the generation of curtailment prescriptions. While other RA Services may choose to implement this feature, it is not strictly required.*

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the EIR) the Agent Service URL associated with the PSE listed as the e-Tag author for the e-Tag impacted by the Potential TLR profile change

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Agent Services may implement a callback mechanism to verify validity of the distribution, but are not required to do so.

The following validation criteria must be checked when a RA Service receives a Potential TLR Profile Change callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the RA Service transferred the Potential TLR Profile Change to the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### ***5.7 Availability and Performance***

Availability and Performance Requirements for the RA Services are defined by the NERC IDC Working Group or other industry groups.

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# Section 6 - Data Model Overview

## 6.1 Tag Data

### 6.1.1 Transaction Types

E-Tag recognizes the following transaction types:

**Normal:** These are the “normal energy schedules” and should be the largest number of schedules. They will include schedules that use point-to-point, network integrated transmission service, or grand-fathered service under a regional tariff. These schedules are included in the IDC and are subject to TLR curtailment.

**Dynamic:** A dynamic schedule is scheduled using an expected value but the actual energy transfer is determined in real time by separate communications external to the e-Tag system. Also included in this type will be regulation energy schedules and energy imbalance schedules. The e-Tag should contain the expected average energy in the energy profile and contain the maximum expected energy in the transmission allocation. Dynamic e-Tags may be adjusted by the source BA, sink BA, or e-Tag author up to 168 hours in the past using a market adjust to set the actual interchange value.

**Emergency:** Emergency Schedules, including reserve sharing, Spinning Reserve, and Supplemental Reserve may be scheduled as Emergency Schedule Type. Another kind of emergency schedules is execution of an operating guide that implements schedules in response to a loading problem. For example, an RTO based emergency re-dispatch that lasts longer than an hour involving multiple Balancing Authorities. Typically, EMERGENCY schedules would not require reservations before being used where Capacity Benefit Margin had been calculated to allow for this reserve sharing.

**Loss Supply:** Used for customers self-supply losses. This type is used to differentiate between a loss schedule and a normal schedule. Some tariffs presently require that schedules for losses require different treatment than schedules for the associated energy.

**Capacity:** Typically used for entities to import operating reserves from outside their reserve-sharing group but may also be used to arrange for purchases or sales of Spinning Reserve and Supplemental Reserve between other entities. This type of e-Tag may be activated upon contingency with zero ramp durations.

**Pseudo-Tie:** A dynamic transfer implemented as a pseudo-tie rather than a dynamic schedule. Used in the same way as a Dynamic e-Tag. These tags may be adjusted in the same manner as Dynamic transaction type e-Tags.

### 6.1.2 Market Segments

Market Segments represent those portions of the path that are associated with the tracking of title and responsibility. A Physical Segment is always associated with a parent Market Segment. However, the opposite is not true; Market Segments can exist independent of Physical Segments.

Market Segments contain information that describes the market information, such as the identity of the market participant, the firmness of energy the market participant is delivering, and the physical segments the entity is responsible for providing. Market

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Segments must be listed in order from GPE to LSE and numerically identified as such (e.g., GPE segment = 1, Intermediate PSE segment =2, LSE segment = 3).

GPE and LSE segments must contain an energy product. Market Segments may only utilize products in the Electric Industry Registry related to Generation or Load.

### **6.1.2.1 Scheduling Responsibilities**

Market Segments can describe a responsibility for managing the scheduling for a portion of the transaction. This is seen when a marketer has rights to a resource and wishes to exercise those rights (i.e., a generation merchant wishes to generate energy for sale, a load serving entity wishes to consume energy based on a purchase, or a marketer wishes to physically move energy from one area to another). When this occurs, the market segment will contain the physical segments over which the marketer has scope.

### **6.1.2.2 Title Transfers**

Market Segments can also describe non-physical title transfers. These are seen when a market participant takes financial possession for the energy commodity, but does not physically move that energy before transferring possession to another financially responsible party. When this occurs, the market segment will not contain any physical segments.

### **6.1.3 Physical Segments**

Physical Segments represent those portions of the path that are physical in nature and represent a movement of energy. There are three types of physical segment: Generation, Transmission and Load. Physical segments must be listed in order from generation to Load and numerically identified as such (i.e., Generator segment = 1, first Transmission Service Provider segment =2, second Transmission Service Provider segment = 3, Load segment = 4). Generation segments must always be listed first, while Load segments must be listed last. E-Tags may only have one Generation segment and one Load segment. All physical segments must reference a parent market segment, identifying the market entity responsible for the physical segment. These references must also be in an order that matches that described by the market segments. For example, the following represents a valid description of a transaction:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 2  
Load: Physical Segment 3, Parent Market Segment Ref 3

In this example, the chain of ownership and physical path are aligned properly. When combined, the results identify a clear tracking of title and scheduling path:

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GPE: Generator

PSE: Transmission

LSE: Load

However, the following example is invalid:

GPE: Market Segment 1

PSE: Market Segment 2

LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1

Transmission: Physical Segment 2, Parent Market Segment Ref 3

Load: Physical Segment 3, Parent Market Segment Ref 2

In this example, the references indicate a paradox: when combined, invalid results are produced:

GPE: Generator

PSE: Load ←out of sequence

LSE: Transmission ←out of sequence

Such cross references are invalid.

### **6.1.3.1**            **Generation**

Generation Segments contain information that describes a generation resource, such as the location of the generation, the firmness of the energy supplied by the resource, and contract references that identify the resource commitment. Generation Segments may only utilize products in the Electric Industry Registry related to Generation.

### **6.1.3.2**            **Transmission**

Transmission Segments contain identification that describes a transmission service, such as the identity of the provider, the POR and POD of the service, the firmness of the service, simple loss information, and contract references that identify the service commitment. Transmission Segments may only utilize products in the Electric Industry Registry related to Transmission.

#### **6.1.3.2.1**        **Scheduling Entities**

Scheduling Entities must be registered as Balancing Authorities in the Electric Industry Registry. Many Transmission Service Providers require that e-Tags illustrate not only the contractual relationship between the Transmission Service Provider and the transmission customer, but also the internal scheduling information to implement the transmission service sold under their tariff. To this end, Scheduling Entities may be defined for a particular Transmission segment. These entities must be listed in the proper scheduling path order (for example, importing BA, intermediate BA, exporting BA).

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In the event a listed POR or POD in the Transmission Segment is listed in the Electric Industry Registry as being a DC Tie, then its registered Balancing Authority must be listed in the e-Tag as a scheduling entity.

NERC/NAESB Standards indicates that Scheduling Entities are optional items in an e-Tag. While there is no requirement in this Specification (or the XML Schema associated with it) that Scheduling Entities be listed, it should be noted that NERC/NAESB Standards requires that scheduling paths be contiguous and verified by all scheduling entities before an e-Tag is approved. Failure to include the proper scheduling entities (or failure to include them in the proper order or location) will likely result in a denied e-Tag.

### 6.1.3.3 Load

Load Segments contain information that describes a load, such as the location of the load, the interruptability of the load, and contract references that identify the load obligation. Load Segments may only utilize products in the Electric Industry Registry related to Load.

### 6.1.4 Profile Sets

Profile Sets define the level at which transactions should run, as well as the factors that set those levels. Profiles are specified as a series of time-ordered segments of duration associated with a particular profile type or types. These segments may be repeated on multiple days, if so desired. Profiles are specified as either *relative* or *absolute*, depending on the type of profile.

A *Relative* profile is described through the use of two or more values which, when combined, create a matrix of profiles. For example, a relative profile may specify a set of reference date-times (01/01/2001 06:00:00, 01/02/2001 06:00:00,) and a set of offsets relative to that date-time (00:00, 02:00, and 04:00). When multiplied together, the resultant matrix is as follows:

	01/01/2001 06:00:00	01/02/2001 06:00:00
00:00	<b>01/01/2001 06:00:00</b>	<b>01/02/2001 06:00:00</b>
02:00	<b>01/01/2001 08:00:00</b>	<b>01/02/2001 08:00:00</b>
04:00	<b>01/01/2001 10:00:00</b>	<b>01/02/2001 10:00:00</b>

Doing so reduces the size of the data significantly (in this case, instead of six explicit date times, only two explicit date times must be supplied, along with three simple time offsets).

An *Absolute* profile is described through the use of explicit date times. The above example, defined through absolute profiles, would be as follows:

<b>01/01/2001 06:00:00</b>
<b>01/01/2001 08:00:00</b>

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<b>01/01/2001 10:00:00</b>
<b>01/02/2001 06:00:00</b>
<b>01/02/2001 08:00:00</b>
<b>01/02/2001 10:00:00</b>

While more verbose, the use of such profiles is more effective when only small profiles are to be specified, or when explicit dates in a relative profile must be referenced.

In all cases, start times must always be earlier than their associated stop times.

Both Relative and Absolute profiles may optionally contain ramp duration (in minutes) associated with both start time and stop time. The ramp stop time is not needed (and is ignored) in any profile except for the last profile. The ramp duration specifies the number of minutes over which the generator will change from the previous block level to the current block level. Interchange schedule ramping is executed between BAs using straddle ramp methods as defined above. The ramp duration exists in the e-Tag in order to provide a vehicle by which ramp duration may be exchanged between entities. Ramps may not overlap. Agent, Approval, and Authority Service software must include at least this validation plus any validation required by NERC, NAESB, or RRO standards.

### **6.1.4.1 Profile Types**

There are five main types of profiles: Market Level, Reliability Limit, Dynamic Minimum Energy, Dynamic Maximum Energy, and Current Level.

#### **6.1.4.1.1 Market Level**

The Market Level defines the level at which the e-Tag author wishes the transaction to run. This level can be used to specify an initial value for a dynamic schedule, as well as a simple level at which the transaction is to be run.

#### **6.1.4.1.2 Reliability Limit**

The Reliability Level defines the maximum allowable level at which a transaction may run when that transaction has been identified by a Reliability Coordinator or other reliability entity as being limited by some constraint. This limit is typically used to indicate curtailments.

#### **6.1.4.1.3 Dynamic Minimum Energy**

Dynamic Minimum Energy specifies a level at which a Dynamic Schedule must minimally run. This level is provided for information purposes only.

#### **6.1.4.1.4 Dynamic Maximum Energy**

Dynamic Maximum Energy specifies a level at or under which a Dynamic Schedule must run. This level is provided for information purposes only.

#### **6.1.4.1.5 Current Level**

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Current level contains the level at which the transaction should be running based on all approved Requests processed in order of receipt by the Authority Service.

### 6.1.4.2 Profile Usage

The above-described profiles can be used in two different ways: as Base Profiles and as Exception Profiles.

#### 6.1.4.2.1 Base Profiles

Base Profiles describe the initially requested profile for implementation. At no time should there be more than one base profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from 6-22 and 8-12 for the same provider). Note that it is acceptable for profile types associated with Dynamic Schedules to overlap (i.e., Dynamic Minimum 0MW from 6-22, Dynamic Maximum 100MW from 6-22, MarketLevel 80MW from 6-22).

Different types of transactions have different Base Profile requirements:

PROFILE TYPE	REQUIRED DATA FOR BASE PROFILE
GENERATION	MARKET LEVEL DYNAMIC MINIMUM ENERGY (for Dynamic Schedule Types) DYNAMIC MAXIMUM ENERGY (for Dynamic Schedule Types)
TRANSMISSION POR	MARKET LEVEL
TRANSMISSION POD	MARKET LEVEL
LOAD	MARKET LEVEL

The Authority Service will calculate the Base Current Level profile.  
It is not valid for a Profile Change to contain a Base Profile.

#### 6.1.4.2.2 Exception Profiles

Profile Modifications, or Exceptions, describe changes to the profile of the e-Tag that must be implemented in place of the original profile for a specified period of time. In all cases, the requested modification to the profile must go through an approval process. At no time should there be more than one exception profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from Hours Ending 6-22 and Hours Ending 8-12 for the same provider). While it is possible to request an exception that overlaps a previous exception, the end result will be a single exception profile that covers the union of the prior exception and the new exception. It is not valid for either a new e-Tag or a Correction to contain an Exception Profile. The Services are responsible for determining the appropriate Current Level based on the profiles in their possession and generating the Current Level Profile.

##### 6.1.4.2.2.1 Market Level Exceptions

A Market Level Exception defines the maximum level at which the e-Tag Author wishes the transaction to run if it differs from the original Market Level. This value is designed to allow the e-Tag Author to change the level of flow for a transaction, but continue to keep the capacity committed as originally specified. In so doing, the e-Tag Author

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reduces the need for detailed evaluation by Transmission Service Providers, as the originally requested transaction already specified appropriate transmission resources.

### **6.1.4.2.2 Reliability Limit Exceptions**

The Reliability Limit defines the maximum level at which a Reliability Coordinator, Balancing Authority, or Transmission Service Provider wishes to run the transaction if it differs from the Market Level. This level is designed to change the level of flow for a transaction due to TLR events, USF, loss of generation, and loss of load.

## **6.1.5 Transmission Allocations**

Transmission Allocations are a special kind of profile set that defines the way in which market participants will fill their capacity commitments with transmission reservations. Transmission Allocations specify a particular reservation, the provider associated with the reservation, and profiles associated with that reservation that describe how the reservation should be consumed. Transmission Allocations must always be associated with Transmission Physical Segments; association with other segments (such as Generation or Load) is not allowed. The Maximum Reservation Capacity associated with each physical segment should be greater than or equal to the energy profile. This is validated by the Authority Service for new Tag creation requests only. Validation of subsequent adjustment Requests by the Authority Service is problematic due to sequencing and approval issues.

The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.

There are two types of profiles, both specified with Maximum Reservation Capacity profiles: Base Allocation Profiles, and Exception Allocation Profiles.

### **6.1.5.1 Base Allocation Profiles**

Base Allocation Profiles define the original manner in which transmission reservations were allocated to meet capacity commitments. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed. These segments may be repeated on multiple days, if so desired.

### **6.1.5.2 Exception Allocation Profiles**

Exception Allocation Profiles define the manner in which transmission reservations are allocated to meet capacity commitments during changes to a Base Allocation Profile. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed, and supersede data supplied in their corresponding base profile.

## **6.1.6 Loss Accounting**

Loss Accounting data specifies the manner in which losses should be accounted for over a specified period of time. Over time, an e-Tag Author may elect to specify different choices for how losses will be provided. Each specification creates (or overwrites) Loss Method Entries, which are used to determine how losses are to be applied.

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# Section 7 - Messaging Overview

## 7.1 Messaging Concepts

### 7.1.1 Use of the Transmission Control Protocol/Internet Protocol

The services defined in this document utilize the public Internet as their physical communication layer. Therefore, the underlying root protocol for this specification shall be Transmission Control Protocol/Internet Protocol or TCP/IP. Utilization of Hypertext Transfer Protocol Secure or HTTPS using NAESB PKI standard compliant certificates is required. The requirement for NAESB PKI standard compliant client certificates will be phased in over time as infrastructure, such as the Electric Industry Registry, are available to support the implementation. Additionally, the services defined in this document shall send data via both Port 80 and 443, the common known port for HTTP and HTTPS respectively, or any other port specified in the URL supplied in the registry, using TCP connections. The use of HTTP or HTTPS will be based on the fully qualified URL. For HTTPS connections, a client certificate may be used. The recipient of an HTTPS connection must verify that the client certificate presented (if one is present) is valid for the sending entity.

When participating entities register for service, they will be required to supply information on the manner in which their implementation will address certain needs. Explicitly, they will need to define:

- URL, Certificate Issuer, and Common Name for Authority Service (BAs only)
- URL(s) for Reliability Coordinator Forwarding (BAs only)
- URL, Certificate Issuer, and Common Name for Approval Service (BAs, Transmission Service Providers, and optionally PSEs)
- URL, Certificate Issuer, and Common Name for Agent Services (PSEs and optionally BAs)

For the purposes of this document, a URL can be considered a two-part description of a resource. The first part describes the scheme used to communicate and the host the communication is to take place with:

`http://www.nerc.com` or `https://www.nerc.com`

The second part is the Uniform Resource Identifier (URI). It describes a particular resource on a host:

`/~gads/meetings.html`

This distinction is important in that when implementing this Interface, the first portion of a URL will define the host to connect to, while the URI will define what resource to apply HTTP or HTTPS request to. Therefore, the following URL:

`http://www.nerc.com/~gads/meetings.html`

would be interpreted in the following manner:

<TCP/IP command> connect to “www.nerc.com”

<Application specific command> write the HTTP request to the connection

In the above example, the request would be:

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“GET /~gads/meetings.html HTTP/1.1”

Both client and server certificates used for e-Tag communications must be compliant with NAESB PKI standards.

### **7.1.1.1      *Establishing Connections***

Establishing connections should be handled in the manner defined by the TCP/IP protocol.

**For automated responses to queries, automated distributions, and other actions not specifically initiated by a person’s action (CallbackHistory, CallbackSummaries, CallbackTags, DistributeCorrection, DistributeNewTag, DistributePotentialTLRProfileChange, DistributeResolution, DistributeProfileChange, DistributeStatus, RequestProfileChange\*):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must follow the procedures below prior to assuming the recipient’s service is unavailable and indicating a message failure:

At least three (3) attempts must be made to make the connection, with no less than five (5) seconds between each attempt, with the maximum time between the first and last attempts not to exceed two (2) minutes.

**For actions specifically initiated by a person’s action, such as Requests, Actions, and Queries (QueryHistory, QueryRequest, QueryRequestIDs, QueryStatus, QuerySummaries, QueryTag, QueryTags, RequestCorrection, RequestNewTag, RequestProfileChange\*, SetState, WithdrawRequest):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must assume the other service is unavailable and *immediately* indicate a message failure.

In both cases, message failures must alert the operator of the service attempting to send the message.

\*If an automated system is issuing RequestProfileChange (i.e., an RAS), then the system *must* retry the connection. If the issuer is a person or operator, the system *must not* retry the correction, and instead alert the operator of the failure.

#### **7.1.1.1.1      *Partial Connection Failures***

Should a connection attempt appear to fail between the Agent, Authority, and/or Approval Services, yet messaging succeeded, an invalid set of errors may be encountered by re-sending the same message (i.e., e-Tag ID Not Unique errors), leading the sender to report incorrect error information. Should such a message duplication be attempted, the receiving service must respond back with a return State of DUPLICATE, and return any original additional response data back to the user (i.e., information other than that

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contained in the ReturnState data structure). This requirement does not apply to messages that it is valid to send multiple times such as query messages.

A message shall be considered a duplicate if

- The method called is the same as the previous message and,
- The entire MessageInfo data collection is the same as the previous message.

It should be noted that this behavior may only occur when messages are duplicates. For instances where a request is made and the information is *not* duplicated, the message must either be processed as a new message or marked as an error, depending on the specific situation (for example, submitting a new e-Tag with a previously submitted e-Tag ID is invalid, but submitting a new Profile Change must be processed normally).

### 7.1.1.1.2      Combining Messages

Previous versions of e-Tag allowed for the combining of messages in order to reduce messaging overhead. For BAs, Transmission Service Providers, and PSEs, this functionality is no longer supported; for each specific entity, a distinct and separate message must be sent. For RCs, it is still allowed to send one message per unique forwarding URL.

## 7.1.2 Use the Hypertext Transport Protocol

e-Tag messaging is accomplished through the use of the Hypertext Transport Protocol (HTTP) over the public Internet, optionally using SSL (HTTPS). The e-Tag services defined in this document utilize HTTP 1.1.

### 7.1.2.1      HTTP/S Requests

The services defined in this document utilize a single HTTP method: the POST method. This method is used for sending data to a server for processing. The standard format of an HTTP Request Header is as follows:

<HTTP method> <resource URI> <HTTP Version>

In this implementation, all Request Headers will exist as the following:

POST <resource URI> HTTP/1.1

This specifies the POST method is to be used, the path and name of the processing resource, and that using HTTP 1.1 is the protocol and version being used. Additional header fields required are described below:

Content-type: text/xml

Declares that the type of data attached to the POST request will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient utilizes this byte length to retrieve the Payload

SOAPAction:NERCETag18:<method name>

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Indicates that the action being requested is part of the NERC e-Tag 1.8 library of methods, and specifies the method being called.

A Carriage Return/Line Feed terminates each header line. The request is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP headers, followed by the Entity Data or Payload.

### 7.1.2.2 HTTP/S Responses

HTTP Responses are returned to a client with the following syntax:

<HTTP Version> <State Code> <Explanation>

The State codes below are utilized and understood by the e-Tag services defined in this document:

200	OK	States that the POST request was accepted and appears to be valid
400	Bad Request	States that the POST request was accepted but appears to point to an invalid URI or does not contain a valid Content-Type

Successful responses will be followed with an entity descriptor, describing the data to follow:

Content-type: text/xml

Declares that the type of data attached to the response will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient uses this byte length to retrieve the Payload.

A Carriage Return/Line Feed terminates each response line. The response is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP response, followed by the Entity Data or Payload. The payload for the purposes of this document shall be an e-Tagging Messaging Protocol message.

The server terminates the connection when the last of the payload has been transmitted.

### 7.1.3 How SMXP Works

All e-Tag 1.8 messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, you invoke procedures on remote machines, and pass any needed data as input parameters to the function. When the function is complete, it returns the result of its processing. The SMXP protocol is layered on top of the HTTP protocol, which handles all of the underlying communication. SMXP defines the set of rules for encoding remote procedure call parameters into HTTP POST messages, as well as the set of rules for how such messages must be processed by a remote server.

The steps of executing an SMXP method are as follows:

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- A request is generated, containing the method name and any needed parameters.
- The request is sent via HTTP to a listener on the remote machine.
- The remote machine receives the SMXP request, and examines it to determine which method must be executed.
- The remote machine executes the appropriate method and packages the result into an SMXP compliant XML document.
- The remote machine returns that document to the calling machine (again via HTTP).

Each SMXP method call has two important parts – the request and the response. Most of the methods used in e-Tag 1.7 are *synchronous* methods, meaning that once the calling machine makes a request, it waits for a response containing the results of its request before continuing.

In a few cases, *asynchronous* methods are used. In an asynchronous method, a request is generated and sent to a remote machine. The remote machine places the request into a queue, and sends a response to the calling machine that indicates the request has been received and queued for processing. The connection is then terminated. At some point in the future, the remote server runs the requested method and sends the result to the calling machine via a separate SMXP message (requiring a second request/response pair). Electronic e-Tagging systems are only required to support the processing of one method call per connection session. Multiple calls per session are not supported.

### 7.1.4 Method Types

E-Tag 1.7 uses various types of methods for various purposes. The methods can be broken up into the following categories.

#### 7.1.4.1 **Requests**

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

#### 7.1.4.2 **Request Distributions**

Request Distributions are the methods used to send requests to the all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

#### 7.1.4.3 **Actions**

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### 7.1.4.4 **Information Distributions**

Informational distributions are the methods used to send information related to the State of a particular request or set of transactions. These are sent to entities to alert them of

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particular requests implementation or withdrawal, as well as specific entities approvals and denial of a request.

### **7.1.4.5**            **Queries**

Query methods are used to search and recover data from an Authority Service or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query. Queries may be sent more than once for the same data, however, Queries sent more than five times for the same data may be rejected.

### **7.1.4.6**            **Callbacks**

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

### **7.1.5** **Faults**

Fault messages are returned by any SMXP method that does not complete due to a structural error in the request. Such errors include any schema validation errors, such as incorrect data types and bad element ordering. Faults are also generated by message syntax errors, namespace errors, and some types of communication error. Fault messages indicate that processing was terminated before the requested procedure could be run. The SMXP specification defines the standard format and content for fault messages. Operators of the service attempting to send the message must be alerted to the receipt of any faults.

### **7.1.6** **Return Values**

Each method returns a State code that reports whether or not the method call was successful. A Return value of "SUCCESS" indicates that there were no errors in the method invocation, and that valid data was passed into the method. A value of "FAIL" indicates that that the method did not run successfully. If the State code is set to FAIL, then an error message must be included which describes the error that was encountered. Operators of the service attempting to send the message must be alerted to the receipt of any FAIL returns.

In certain cases, the method may return a value of "DUPLICATE." This value indicates that the method being called has been previously called with identical parameters and a response has already been returned. Typically, this value is received after a partial connection failure and subsequent retry.

### **7.1.7** **Error Messages**

Error messages are generated whenever a method does not complete successfully due to problems with provided parameters or execution of the query (unless the problems have already been defined by a fault or HTTP error message). If an error message is present,

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the State code must have a value of FAIL. Error messages indicate that the method was executed, but was unable to fulfill the caller's request due to problems encountered during the processing of the request. Error messages can be caused by passing invalid (but syntactically correct) data to a method or by internal system failures or outages.

### **7.2 Method Descriptions**

The six fundamental method types align with the system concepts defined in Section 1 of this document. Those types are Requests, Request Distributions, Request Actions, Information Distributions, Queries, etc. Details about the exact composition of these various data elements are defined in the latest e-Tag schema .

#### **7.2.1 Special Data Structures**

Some methods require specific data structures. In cases where the structure is unique to a particular method, the structure will be defined with the method description. Other generic structures are defined below.

##### **7.2.1.1 Tag ID**

Tag IDs are values that uniquely identify an e-Tag. It is composed of four values:

- The Source BA's Entity Code
- The authoring PSE's Entity Code
- The e-Tag Code assigned by the PSE to aid in identification of the transaction
- The Sink BA's Entity Code

The combination of these values must uniquely identify the e-Tag. At no point in time may two active e-Tags exist with the same e-Tag ID. To ensure this, an e-Tag ID may NOT be "reused" until a minimum of one (1) year has passed since the last point in time in which the e-Tag previously using the e-Tag ID ran.

##### **7.2.1.2 Message Info**

Message Info is a collection of data used to describe the basic communication characteristics of an e-Tag message. Message info is composed of four values:

- The Entity Code of the entity initiating the message transfer
- The Security Key used to ensure validity of the message
- The Entity Code of the entity to whom the message is being transferred
- A date and time indicating when the message was generated

This information must be used to identify message participants, as well as provide simple authentication and audit information.

##### **7.2.1.3 Return State**

Return State is a collection of data used to indicate the general results of a message being processed. Return State has three specific components:

- A date and time indicating when the return was generated
- A State of the processing
- Optionally, a list of errors encountered during the processing of the message

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This information must be used to communicate semantic problems with a message back to a message initiator.

### 7.2.1.4 Miscellaneous Info

In many messages, it is possible to communicate token/value pairs of non-standard information. This is included as a convenience and method for extending the e-Tagging system. By using the Miscellaneous Info function, entities can pass along data to other parties that are not directly supported by the data model. For example, when initiating a curtailment request, an entity could provide various other information components, such as:

IMPACTED FLOWGATE : 1178

PROCEDURE : LLR

It is intended that entities make use of this feature in a standard, published manner that will allow recipients to process and utilize the information transferred.

### 7.2.2 Errors and Error Lists

The following are errors that may be supplied by the recipient of a method call should an error condition exist. The responder must provide an error number and a textual description of the error that provides specific detail about the error (i.e., information that will help the user resolve the problem). Supported errors are:

0001	Tag Already Exists	The e-Tag ID provided has already been used on an e-Tag held by the responding service.
0002	Tag Not Found	The e-Tag ID referenced is one not held by the responding service.
0003	Segment Not Found	The Segment referenced is not one held by the responding service
0004	Request Not Finalized	The profile cannot be changed, as it has not yet been finalized.
0005	Request Finalized	The e-Tag cannot be corrected or withdrawn, as it has already been finalized (CONFIRMED, IMPLEMENTED, etc.)
0006	Request Not Found	The referenced request is not one held by the responding service
0007	Stale Request	The request is inappropriate due to timing requirements.
0008	Invalid Range	The range specified exceeds or otherwise violates the rules associated with its definition
0009	Invalid Security Key	The Security Key provided is not correct
0010	Tag Not Requested	The e-Tag being presented is not one requested by the responding service
0011	Insufficient Rights	The requester does not have appropriate rights
0012	Contact Not Specified	A contact is required to be specified, and was

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		not provided
0013	Reason Not Specified	A Reason is required to be specified, and was not provided
0014	Invalid Return Rate	The Return Rate was either not specified or incorrectly formatted
0015	Correction not allowed	The proposed correction would change the physical or financial path, which is not allowed.
0016	Missing Correction	The SetState request cannot complete because the Approver does not have the most recent correction for the segments in their scope.
0017	Missing DC Tie Operator	The RequestNewTag method cannot complete because a Balancing Authority registered to operate a requested DC Tie was not included as a Scheduling Entity for the Transmission Service Provider in the e-Tag.
0018	Orphan Profile	Every Profile must be reference by at least one Physical Segment
0019	Profile Not Found	The profile being referenced was not found in the e-Tag
0020	Invalid Path Order	The Market Segments, Physical Segments, and Parent market Segment References must be in correct order.
0021	Invalid Registered Value	A registered value is incorrect. This includes invalid or incorrect to/from entities, deactivated or unregistered PORs/PODs and/or Sources/Sinks, and non-existent products.

### 7.2.3 Initiating a Request

#### 7.2.3.1 *Special Data Structures*

##### 7.2.3.1.1 *TimeClassification*

Used to indicate to an e-Tag Author that a request was received On-time, Late, or ATF based on the timing tables in the NERC/NAESB Standards.

#### 7.2.3.2 *Request New Tag*

**Issued by:** Agent Services

**Processed by:** Authority Services

**Purpose:** Used to submit a new e-Tag to the Authority Service for processing.

In	Message Info	Required
	Tag	Required
Out	Return State	

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(successful)	
	Request ID
	Late Flag
Errors	0001 Tag ID Already Exists
	0007 Stale Request
	0017 Missing DC Tie Operator
	0018 Orphan Profile
	0020 Invalid Path Order
	0021 Invalid Registered Value

### 7.2.3.3 Request Correction

**Issued by:** Agent Services

**Processed by:** Authority Services

**Purpose:** Used to submit changes to a new e-Tag while it is being evaluated by Approval Entities

In	Message Info	Required
	ContactInfo	Required
	Tag ID	Required
	Correction List	Required
	Notes	Optional
Out (successful)	Return State	
	Correction ID Set	
Errors	0002 e-Tag ID Not Found	
	0003 Segment Not Found	
	0005 Request already in Final state	
	0009 Invalid Security Key	
	0015 Correction Not Allowed	
	0021 Invalid Registered Value	

### 7.2.3.4 Request Profile Change

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to change the energy level or transmission allocation associated with a particular e-Tag.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Market Profile Change OR Reliability Profile Change	Required
	Miscellaneous Info List	Optional

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	Notes	Optional
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0002 e-Tag not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not Specified	
	0013 Reason not Specified	
	0019 Profile Not Found	
	0021 Invalid Registered Value	

### 7.2.4 Request Distribution

#### 7.2.4.1 *Special Data Structures*

##### 7.2.4.1.1 **Approval Rights Flag**

Used to indicate that a recipient of a request distribution has approval rights over the request.

##### 7.2.4.1.2 **Impact Flag**

Used to indicate that a recipient of a correction request distribution has a need to re-evaluate the e-Tag based on the correction.

#### 7.2.4.2 *Distribute New e-Tag*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to distribute New e-Tag Requests to parties with rights to view or approve the request.

In	Message Info	Required
	Tag	Required
	Approval Rights	Required
	Late	Optional
Out (successful)	Return State	
Errors	0001 e-Tag already exists	
	0021 Invalid Registered Value	

#### 7.2.4.3 *Distribute Correction*

**Issued by:** Authority Services

## Comments Submitted by S. Ashbaker, WECC

Electronic Tagging - Functional Specifications      Version 1.8.1  
September 2, 2009

**Processed by: Agent, Approval, RA Services**

**Purpose:** Used to distribute a correction to parties with rights to view or approve the original New e-Tag Request.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Correction List	Optional
	Loss Accounting List	Optional
	Impact Flag	Required
	Late Flag	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0003 Segment Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.4.4      *Distribute Profile Change*

**Issued by: Authority Services**

**Processed by: Agent, Approval, RA Services**

**Purpose:** Used to distribute a request to change a profile to the parties with rights to view or approve the original New e-Tag Request.

In	Message Info	Required
	Contact info	Required
	Tag ID	Required
	Approval Rights	Required
	Request ID	Required
	Requestor	Required
	Late	Required
	Exception Profile Change	Optional
	Transmission Allocation Change List	Optional
	Loss Accounting Change List	Optional
	Misc Info list	Optional
	Notes	Optional
	Request Time Stamp	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

## Comments Submitted by S. Ashbaker, WECC

Electronic Tagging - Functional Specifications  
September 2, 2009

Version 1.8.1

### 7.2.5 Request Actions

#### 7.2.5.1 Set State

**Issued by:** Approval Services

**Processed by:** Authority Services

**Purpose:** Used by entities with Approval Rights to a request to specify their commitment to implement or reject the request.

In	Message Info	Required
	Tag ID	Required
	Scope	Required
	Request Ref	Required
	Approval Status	Required
	Approval Time Stamp	
	Notes	Optional*
Out (successful)	ReturnState	
Errors	0002 e-Tag Not Found	
	0003 Segment not Found	
	0005 Request Finalized	
	0009 Invalid Security Key	
	0013 Reason not Specified	
	0016 Missing Correction	
	0021 Invalid Registered Value	

\*Required for states of Denied or Study.

#### 7.2.5.2 Withdraw Request

**Issued by:** Agent, Approval, and RA Services

**Processed by:** Authority Services

**Purpose:** Used by request authors to remove their request from consideration prior to the completion of its evaluation.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	

## Comments Submitted by S. Ashbaker, WECC

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	0009 Invalid Security Key
	0011 Insufficient Rights
	0012 Contact not specified
	0021 Invalid Registered Value

### 7.2.5.3 *Terminate Request*

**Issued by:** Agent and Approval Services

**Processed by:** Authority Services

**Purpose:** Used by request authors to set the transmission and energy profiles of an e-Tag to zero and set its state to TERMINATED after the request has transitioned to IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	DateTime	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not specified	
	0021 Invalid Registered Value	

### 7.2.6 Information Distribution

#### 7.2.6.1 *Distribute Status*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, and RA Services

**Purpose:** Used to notify entities with Approval and Viewing rights of other Approver's actions with regard to a particular request.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
	Status List	Required

## Comments Submitted by S. Ashbaker, WECC

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	Flowgate List	Optional*
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### **7.2.6.2           Distribute Resolution**

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to notify entities with Approval and Viewing rights of the final resolution of a particular request.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
	Request Status	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### **7.2.6.3           Distribute Potential TLR Profile Change**

**Issued by:** RA Services

**Processed by:** Agent Services

**Purpose:** Used to inform e-Tag Authors about potential impending profile changes due to TLR.

In	Message Info	Required
	Start Date Time	Required
	TLR Event Ref	Required
	Misc Info list	Optional
	TLR Profile Change List	Required
Out (successful)	Return State	
Errors	0021 Invalid Registered Value	

### **7.2.6.4           Callback Potential TLR Profile Change**

**Issued by:** Agent Services

**Processed by:** RA Services

## Comments Submitted by S. Ashbaker, WECC

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In	Message Info	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7 Query Functions

#### 7.2.7.1 Query Summaries

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to request a list of e-Tags and keys based on search criteria. Primarily used for recovery purposes.

In	Message Info	Required
	Range	Required
Out (successful)	Request ID	
Errors	0008 Invalid Range	
	0021 Invalid Registered Value	

#### 7.2.7.2 Callback Summaries

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send a list of e-Tags and keys to an entity that has previously requested via QuerySummaries.

In	Message Info	Required
	Tag Summary List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

#### 7.2.7.3 Query e-Tag

**Issued by:** Agent Services, Approval, and RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
----	--------------	----------

## Comments Submitted by S. Ashbaker, WECC

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	Tag ID	Required
Out (successful)	Return State	
	Tag	
Errors	0002 e-Tag not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.4 Query e-Tags

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to request multiple e-Tags from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag Credential List	Required
	Return Rate	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0014 Invalid Return Rate	
	0021 Invalid Registered Value	

### 7.2.7.5 Callback e-Tags

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send multiple e-Tags from an Authority Service to an entity that requested them via QueryTags. Primarily used for recovery purposes.

In	Message Info	Required
	Tag List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0010 e-Tag Not Requested	
	0021 Invalid Registered Value	

### 7.2.7.6 Query History

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

## Comments Submitted by S. Ashbaker, WECC

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**Purpose:** Used to retrieve a single e-Tag's History from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.7 *Callback History*

**Issued by:** Authority Services

**Processed by:** Agent, Approval, RA Services

**Purpose:** Used to send a single e-Tag's History from an Authority Service to an entity that requested it via QueryHistory. Primarily used for recovery purposes.

In	Message Info	Required
	History	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.8 *Query Request*

**Issued by:** Agent Service, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a specific request for a single from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
Out (successful)	Return State	
	RequestProfileChange	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

## Comments Submitted by S. Ashbaker, WECC

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### 7.2.7.9 Query Request IDs

**Issued by:** Agent Service, Approvals, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a list of requests made regarding a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Status(es)	Optional
Out (successful)	Return State	
	Request ID Summary List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.10 Query Status

**Issued by:** Agent, Approval, RA Services

**Processed by:** Authority Services

**Purpose:** Used to retrieve a request's State from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
Out (successful)	Return State	
	Request State	
	Approver State List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.11 QueryAvailability

**Issued by:** Agent and Approval Services

**Processed by:** Agent, Approval, and Authority Services

**Purpose:** Used to determine availability/status of an e-Tagging service. Primarily used to evaluate system performance.

In	From Entity	Required
----	-------------	----------

### Comments Submitted by S. Ashbaker, WECC

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	To Entity	Required
Out (successful)	Return Time Stamp	
	Request Value	
Errors	0021 Invalid Registered Value	

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## Section 8 - Implementation Requirements

### 8.1 Notifications

#### 8.1.1 Modifications Impacting Interoperability

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services that it is anticipated will have an impact on interoperability must coordinate the implementation with the NERC/NAESB subcommittee or working group responsible for the e-Tag specifications. NERC/NAESB will require structured interoperability testing for any changes impacting interoperability prior to implementation.

#### 8.1.2 Modifications Not Impacting Interoperability

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services must send notification to the appropriate list server(s) 1 business day prior to implementation. In the event of a critical bug correction, this requirement is waived.

### 8.2 E-Tag System Enhancement Process

#### 8.2.1 Change Drivers

Changes and enhancements to the e-Tag system are generated through both industry driven efforts and by individual entities (e-Tag vendors and e-Tag system users). Industry driven changes include (1) mandated changes from NAESB business practices, NERC standards, or FERC orders; (2) enhancement requests from any e-Tag system vendor or user; (3) corrections and clarifications by NERC/NAESB or (4) modifications to reflect changes in the industry (such as the creation of the functional model).

#### 8.2.2 Creation of the Revised Specification and/or Schema

Modifications are typically bundled into a single e-Tag revision. The JESS reviews the modification requests and integrates them into the specification and/or schema if possible. The modified specification and/or schema are then posted for comment by the industry participants and comments are addressed by the JESS. The JESS's responses are subsequently posted. This process circles until the JESS has addressed all comments and concerns. The JESS then submits the revised e-Tag specifications to the NERC IS for review and discussion. The JESS then works with the vendors to prepare final specification revisions and XSD revisions in order to take advantage of any existing infrastructure and ensure that there are no problems created by the revisions. Any

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comments and concerns are addressed and the final product is sent to the NAESB EC for approval.

### 8.2.3 Interoperability Testing Period

The JESS also creates structured interoperability test scenarios, structured interoperability test registry data, and interoperability test plans. The JESS also facilitates the structured tests and resolve any disagreements in specification interpretation. The testing period consists of structured interoperability tests that involve all vendors in all service roles that they provide. These tests continue until all vendors pass the tests (or as mutually agreed). Test participants are also required to make their test systems available for other participants to utilize for development and testing. The JESS may also schedule additional testing in order to minimize risk and maximize the probability of success. Subsequent to successful completion of all tests, the industry is given one month at a minimum to deploy modified software in preparation for implementation.

### 8.2.4 Implementation

The JESS, working with the vendors, creates an implementation schedule and plan. This plan includes all steps necessary to transition between the old version of e-Tag and new version of e-Tag. This plan is also submitted to the industry for comment and comments are acted on and responded to. Finally, JESS coordinates continent wide implementation and facilitates resolution of any problems.

## Comments Submitted by S. Ashbaker, WECC

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# Appendix A Special Interconnection Implementation Requirements

## *Introduction*

This appendix contains information that the e-Tag vendors need to know in order to correctly implement the e-Tag services. The regional (RRO) details that impact interoperability or require additional functionality or validation by the Authority Service should be included in this appendix.

If these do not impact interoperability or require implementation of specific features by the Authority Service then they need not be included in this appendix. Instead these may be accessed from the [NAESB web site](#) (modify this when the URL is provided).

## ***WECC Interconnection***

### **Introduction**

WECC business standards require some additional features to the standard tagging implementation. The sections below describe the additional requirements for parties providing tagging services to WECC members. These additional requirements are mandatory for all Agent, Approval, and Authority Services used in the western interconnection, and optional for services used by other interconnections.

### **INT-BPS-009**

INT-BPS-0009 applies to all tags of transaction\_type = "Capacity" that contain a sink point associated with the WECC region.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must only use energy product C-SP or C-NS.
- Any reliability entity (BA or Transmission Service Provider) may adjust the market-level energy profile. They may not change nor add transmission allocations.
- The Load-Serving-Entity listed on the tag has the same adjustment rights as the tag author or Creating Purchasing-Selling-Entity (CPSE) (can adjust energy or transmission or both).
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag's Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will

## Comments Submitted by S. Ashbaker, WECC

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have approval rights for such requests. This shortened process applies only to tag changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.

### **INT-BPS-011**

INT-BPS-011 applies to all tags of transaction type = “Recallable” that contain both a source and a sink point associated with the WECC region. Note that the version of INT-BPS-011 currently available from WECC references tags of transaction type = Normal. It was subsequently decided that this requirement should be implemented using a new transaction type (referred to as Recallable) instead. References to Normal in the INT-BPS-011 standard should always be interpreted as Recallable.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must use energy product C-RE.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag’s Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.

### **INT-BPS-014**

INT-BPS-014 applies to all tags that both the source and sink points are associated with the WECC region for transaction type = NORMAL.

The following additional tagging requirements apply to all such tags:

- The first market segment (the GPE) must contain MiscInfo with:  
Token = “WECC\_Reserve\_Responsible\_Entity”,  
Value = the name of the entity filling the role of “responsible entity” selected as described in the WECC business practice.
- In the case where the RE is NOT the Source BA, the following must be provided:  
The first market segment must also contain MiscInfo with  
Token = “WECC\_Reserve\_Responsible\_Entity\_Type”,  
Value = BA or PSE.  
Tags that are required to contain a reserve obligation multiplier must contain

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MiscInfo (in the first market segment) with  
Token = "WECC\_Reserve\_Multiplier",  
Value = 5, 7, or 100.

- Agent and Authority Services will retain a list of which PSEs are registered with WECC as valid RSG members. This list will be made available for programmatic download via webService or other standard mechanism to be provided by WECC. No validation will be done to support this business practice until the RSG member list is available for download. The list is available at:  
<http://www.wecc.biz//documents/library/ESWG/WECCBP14-PSERE.csv>
- The Business Practice contains additional implementation details.

### ***Eastern Interconnection***

No Special Implementation Requirements have been identified.

### ***ERCOT***

No Special Implementation Requirements have been identified.

### ***Quebec Interconnection***

No Special Implementation Requirements have been identified.

**Comments Submitted by T. Kannel, MCG Energy**

-----Original Message-----

From: Tim Kannel, MCG Energy  
Sent: Monday, October 05, 2009 1:21 PM  
To: NAESB@NAESB.ORG  
Cc: 'James Hansen'; 'Harshbarger, Robert'  
Subject: RE: Request for Formal Comments on Version 1.8.1 e-Tag Specifications and Schema - Due Oct. 5, 2009

MCG has the following comments on the specification:

The sentence added to section 3.6.3.2 regarding ActOnByTime and TimeClassification is out-of-place, as this section is regarding withdrawals. Those fields are never updated at time that a request is finalized.

The paragraph regarding the SE field in section 3.6.1.1 ends with a statement about the delivery state. This is poor wording since "delivery state" is a phrase used in regards to request distributions, not the validation performed by the authority at the time of the submittal. The end of that sentence should be restored to its previous wording.

The specification has been modified to prohibit transmission changes in ATF adjustments. A related topic is whether or not ATF adjustments are allowed to include changes to loss accounting information; the spec isn't sufficiently clear on this point, even with the change that was made to section 3.6.1.3.

A new item for consideration is whether the spec needs clarification about the appropriate use of the Delivery State. The spec states that the Delivery State for an entity is in regards to a "particular request" or "request distribution".

This has usually been interpreted as being limited to the initial message containing the request data (e.g., DistributeNewTag). However, it has come to our attention that another authority service vendor may be updating delivery states after sending status and/or resolution messages.

Tim Kannel  
MCG Energy Solutions, LLC

-----Original Message-----

From: Tom Vandervort [<mailto:Tom.Vandervort@nerc.net>]  
Sent: Monday, September 07, 2009 8:25 AM  
To: jess\_plus@nerc.com; is\_plus@nerc.com; tagven@nerc.com; tagging@nerc.com  
Cc: cgalik@naesb.org; Paul J Baratelli; Brian Nolan  
Subject: FW: Request for Formal Comments on Version 1.8.1 e-Tag Specifications and Schema - Due Oct. 5, 2009

JESS Members, e-Tag Vendors, e-Tag Users, and Industry Participants

Below is the official announcement for the e-Tag Specifications and Schema proposed revisions. The previous e-mail compliments this request.

Please submit your comments to the NAESB office.

Thank you,

Tom Vandervort  
NERC JESS Secretary

-----Original Message-----

From: naesbmail@naesb.org [<mailto:naesbmail@naesb.org>]  
Sent: Friday, September 04, 2009 6:51 PM

**Comments Submitted by T. Kannel, MCG Energy**

To: Tom Vandervort  
Subject: Request for Formal Comments on Version 1.8.1 e-Tag Specifications and Schema - Due Oct. 5, 2009

Dear NAESB WEQ Members and Interested Industry Participants,

An industry formal comment period begins today, September 4, 2009, and ends on Monday, October 5, 2009 for a Wholesale Electric Quadrant recommendation voted out of the joint Electric Scheduling Subcommittee (JESS) meeting on September 2, 2009:

Recommendation:

2009 WEQ Annual Plan Items 1(a); 3(a)(vii); R05020: 1.8.1 e-Tag Specifications and Schema

1.8.1 Specification - clean:

[http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a2.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a2.doc)

1.8.1 Specification - redlined:

[http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a1.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a1.doc)

1.8.1 Schema - .xds:

[http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a4.xsd](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a4.xsd)

1.8.1 Schema - word:

[http://www.naesb.org/pdf4/weq\\_2009\\_api\\_1a\\_3avii\\_r05020\\_090409reqcom\\_a3.doc](http://www.naesb.org/pdf4/weq_2009_api_1a_3avii_r05020_090409reqcom_a3.doc)

All interested parties, regardless of membership status within NAESB are eligible to submit comments for consideration. The Wholesale Electric Quadrant Executive Committee will review the recommendations and consider them for vote during an upcoming Executive Committee meeting. The Executive Committee will review all submitted comments.

All comments received by the NAESB office by the end of business, October 5, 2009 will be posted on the Home Page (WEQ Request Page):  
[http://www.naesb.org/weq\\_request.asp](http://www.naesb.org/weq_request.asp) and forwarded to the WEQ Executive Committee members for their consideration. If you have difficulty downloading the recommendations, please call the NAESB office at (713) 356-0060.

Best Regards,

Cory Galik Cummings  
NAESB

cc: Rae McQuade, President



## OATI Comments to NAESB on Version 1.8.1 E-Tag Specification and Schema October 5, 2009

Open Access Technology International, Inc. (OATI) has the following comments to the proposed Version 1.8.1 E-Tag Specifications and Schema currently posted for formal comment.

### Forwarding URLs

As currently stated in the proposed Electronic Tagging Functional Specification, the Tag Authority services are required to forward the e-Tag messages to the Secondary Service URL, with the burden to support this functionality (including the financial burden associated with modifying the Tag Authority service) resting exclusively with the Balancing Authorities. However, the entities that benefit from this additional functionality are those required to provide for the Tag Approval and Agent services. Therefore, it appears there is an inequity of financial responsibility for the improvement of the tagging infrastructure between those Entities required to provide for this functionality versus those entities that benefit from the added functionality.

While the software changes to support the proposed tag forwarding scheme are not significant, the number of e-Tag messages that the Tag Authority service would be obligated to send to these forwarding URL services may increase by an order of magnitude, perhaps as much as 20 times or more. To support this, as yet unknown, increase in messaging volume while maintaining compliance with the current NERC Coordinate Interchange (INT) standard for Interchange Authority distribution of messages within the mandated timing requirements may place a significant additional cost on the (Sink) Balancing Authorities. Because of the uncertainty of knowing how many entities may chose to register forwarding URLs or even when those forwarding URLs may be registered over time, Tag Authority services would have to be sized for a worst case assumption on the needed infrastructure to support this added messaging obligation and still guarantee compliance with the message delivery obligation under the INT Standards. If a Balancing Authority is not prepared for such a contingency, they may be faced with violation of their message delivery obligations and bear responsibility for attendant sanctions and potential penalties should the loading to support the forwarding URL messaging take an unanticipated jump due to the registration of new forwarding URLs. As noted above, the cost associated with supporting the forwarding URL functionality and associated infrastructure will be the responsibility of the Balancing Authorities, but is caused by the actions taken by others.

To better associate the costs of the proposed functionality to those entities that cause and benefit from this functionality, the following two alternatives could be considered:

**Alternative #1** - Modify the Tagging Specification to move the Tag Forwarding functionality from the Tag Authority service section to the Approval and Agent service sections. For example, if a Tag Approval service adds a Secondary Service URL, it is the Tag Approval service responsibility to forward the e-Tag messages it receives to the appropriate Secondary Service URL. This equalizes the benefit of the functionality to the burden. To accomplish this, the following change to the Tagging Specification could be utilized:

**Section 1.2:** Modify the definition of Secondary Service URL, as follows:

A single URL registered in conjunction with an Agent or Approval Service URL for a secondary Agent or Approval Service. This secondary service receives a copy of all e-Tag request messages from the Service URL, sent by an Authority Service to the Service URL. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the "Forwarding URL" field is used for this purpose.

Section 1.4.9.2: Remove the second paragraph:

Remove “Messages sent from an authority service to a Secondary Service URL shall be kept for a minimum of seven (7) days from the time that the message was sent.”

Section 2.6.2: Add the following paragraph immediately after the second paragraph:

If the message passes validation and a Secondary Service URL is registered for the Agent Service PSE, the valid message received by the Agent Service must be sent to its Secondary Service URL.

Section 3.6.1.1.1: Remove the paragraph following the second set of bullet items:

Remove “In addition, the messages, including callbacks, must be sent to the Secondary Service URL registered to any PSE, BA, or Transmission Service Provider in the distribution list. This does not apply to any URL that matches a Service URL. These forwarded messages shall not impact the Delivery State of the associated entity.”

Section 4.6.2: Add a fourth bullet item with the following:

- If the message passes validation and a Secondary Service URL is registered for the Approval Service, the valid message received by the Approval Service must be sent to its Secondary Service URL.

**Alternative #2** - Modify the E-Tag Specification to remove the sole responsibility of the Tag Authority service to forward the e-Tag messages, and create a new service altogether, for instance, Forwarding Service. Those entities that wish to have their e-Tag messages forwarded need to provide a Forwarding Service, or contract a Forwarding Service from the e-Tag service providers. Again, as with Alternative 1 above, the burden to support the forwarding of e-Tag messages lies exclusively with the benefiting entity. This would require additional rewrite effort within the proposed Tagging Specification.

## **Implementation Plan**

The current draft of the implementation plan affords very little time between specification approval and implementation. To accomplish the infrastructure enhancements that may be required to support the proposed Version 1.8.1 specification, additional time should be incorporated within the implementation plan between approval of the Tagging specification and start of testing.

Comments Submitted by E. Skiba, WEQ SRS

**FORMAL COMMENTS**

**Quadrant:** Wholesale Electric Quadrant  
**Recommendation:** 2009 WEQ Annual Plan Items 1(a),3(a)(vii)/R05020, Version 1.8.1 Electronic Tagging Functional Specification and Schema  
**Submitted By:** Standards Review Subcommittee  
**Date:** October 5, 2009

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Under the Standards Review Subcommittee (SRS) Scope of Work, which was approved by the SRS on March 6, 2008, the SRS agreed to review recommendations and if the subcommittee deemed appropriate, they would submit advisory comments to the Executive Committee for consideration. As stated in the Scope of Work, these comments are “not intended to change the scope of the Business Practices or recommendation, but to provide consistency and uniformity across all WEQ Business Practices.”

The SRS is requesting the Executive Committee consider the following advisory comments in their review of this recommendation;

- Throughout the Functional Specification, the use of a ‘Forwarding URL’ or ‘Service URL’ is mandated. The SRS would caution that this may create a confidentiality issue that could potentially violate an entities FERC approved Tariff or other formal confidentiality agreements. For example, Purchasing Selling Entities (PSE) are not typically signatories to NERC Data Confidentiality Agreements, yet they would be free to receive and forward electronic tags containing data from other PSEs, BAs,TPs, etc. The SRS recommends that the use of this methodology be made optional in order to avoid such conflicts, or that an appropriate confidentiality agreement be mandated in the Functional Specification.

Comments Submitted by the WEQ JESS

# Electronic Tagging Functional Specification

Version 1.8.01

NOT YET APPROVED FOR IMPLEMENTATION

~~November 7, 2007~~

September 2, 2009

Joint ~~Interchange~~Electric Scheduling  
Subcommittee  
~~Work Group~~

North American Energy Standards Board – Wholesale Electric  
Reliability Corporation Quadrant

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## Section 1 - Functional Description

### 1.1 Introduction

#### 1.1.1 Purpose

This document describes the functional requirements and detailed technical specifications for the implementation of an electronic Transaction Information System (TIS), ~~also referred to~~ currently implemented as Electronic Tagging or ~~just~~ e-Tag. These requirements and specifications provide a basis for tools designed to facilitate identification and communication of interchange transaction information (e-Tags) between parties in accordance with NERC Reliability Standards and NAESB Wholesale Electric Quadrant Business Practice Standards.

#### 1.1.2 E-Tag Related References

Data Information related to the JESS (formerly JISWG ~~and this work~~) can be found at [http://www.naesb.org/weq/weq\\_jiswgjess.asp](http://www.naesb.org/weq/weq_jiswgjess.asp)

The most recent copy of the e-Tag 1.8.1 XML Schema can be found at <http://reg.tsin.com/Tagging/e-Tag/>

For detailed information regarding NAESB Standards, please see <http://www.naesb.org/>

For detailed information regarding NERC Standards, please see <https://standards://www.nerc.net/com/>

The Hypertext Transport Protocol version 1.1 is described by W3C RFC 2616 and can be obtained at <http://www.w3.org/Protocols/HTTP/1.1/rfc2616.txt.gz>

The XML Schema Protocol is defined by the W3C and can be downloaded from <http://www.w3.org/2000/10/XMLSchema>

The Simple Method exchange Xchange Protocol (SMXP) ~~is~~ was defined by the OASIS Standards Collaborative and can be found ~~on the TISWG site~~ at: <http://reg.tsin.com/Tagging/e-Tag/>

<http://reg.tsin.com/Tagging/e-tag/>

### 1.1.3 Change Log

Version	Change	spare
1.7096	Accepted all changes in 1.7095 posted document	
	Replaced NERC policy references with NERC/NAESB Standards references	
	Incorporated Functional Model language	
	Added Change Log	
	Updated other references and URLs	
	Market Re-dispatch (MRD) language and function removed	
1.7.097	Removed Passive Approval by Reliability Entities	
	Extend e-Tag creation to 48 hours into the past	
	Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags	
	Remove 24 hour limit on Reliability Adjustments	
	Remove Counter Party Reports	
	Remove references to MRD	
	Add Optional Approval Rights for any PSE cited in the transmission allocation	
	Replaced various state diagrams with descriptive wording	
	Strike automatic approval of cancellations	
1.8	Remove Background section	
	Add reference to default ramp rate definitions	
	Add new final states and their definitions	
	Add Rounding definition	
	Add Ramp Duration validation	
	Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)	
	Modify in-kind loss calculations	
	Define which Functional Model entities can be Scheduling Entities (BA)	
	Strike Appendix A	
	Strike erroneous current level warning	
	Carbon Copy list (no approval, sent copies of e-Tag)	
	Calculation of ActOnByTime and ImplementTime	
	Addition of TimeClassification (Late, OnTime, ATF)	
	NERC web site changed to Electric Industry Registry web site	
	Added RequestTerminateTag and related handling	
	Simplify Recovery function	
	Allow ATF e-Tags to be Terminated	
	Allow Source or Sink to modify DYNAMIC e-Tag with actual data	

	<del>Transmission Allocation must be <math>\geq</math> energy profile.</del>	
	<del>Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority</del>	
	<del>Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard</del>	
	<del>Extend e-Tag creation to 168 hours into the past</del>	
	<del>Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags</del>	
	<del>Current Level no longer distributed (calculated based on approved requests in request order)</del>	
	<del>Change Tag Agent, Tag Approval, Tag Authority to Agent, Approval, Authority</del>	
	<del>Change Tag to e-Tag</del>	
	<del>Add Pseudo Tie tag type.</del>	
	<del>Add functionality to allow TSP to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm</del>	
	<del>Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.</del>	

<u>Version</u>	<u>Change</u>
<u>1.7096</u>	<u>Accepted all changes in 1.7095 posted document</u>
	<u>Replaced NERC policy references with NERC/NAESB Standards references</u>
	<u>Incorporated Functional Model language</u>
	<u>Added Change Log</u>
	<u>Updated other references and URLs</u>
	<u>Market Re-dispatch (MRD) language and function removed</u>
<u>1.7.097</u>	<u>Removed Passive Approval by Reliability Entities</u>
	<u>Extend e-Tag creation to 48 hours into the past</u>
	<u>Extend e-Tag adjustment to 96 hours into the past for DYNAMIC e-Tags</u>
	<u>Remove 24 hour limit on Reliability Adjustments</u>
	<u>Remove Counter Party Reports</u>
	<u>Remove references to MRD</u>
	<u>Add Optional Approval Rights for any PSE cited in the transmission allocation</u>
	<u>Replaced various state diagrams with descriptive wording</u>
	<u>Strike automatic approval of cancellations</u>
<u>1.8</u>	<u>Remove Background section</u>
	<u>Add reference to default ramp rate definitions</u>
	<u>Add new final states and their definitions</u>
	<u>Add Rounding definition</u>
	<u>Add Ramp Duration validation</u>
	<u>Identify physical segment in Curtailment (for proper MWh accounting when in-kind losses are used)</u>

	<u>Modify in-kind loss calculations</u>
	<u>Define which Functional Model entities can be Scheduling Entities (BA)</u>
	<u>Strike Appendix A</u>
	<u>Strike erroneous current level warning</u>
	<u>Carbon Copy list (no approval, sent copies of e-Tag)</u>
	<u>Calculation of ActOnByTime and ImplementTime</u>
	<u>Addition of TimeClassification (Late, OnTime, ATF)</u>
	<u>NERC web site changed to Electric Industry Registry web site</u>
	<u>Added RequestTerminateTag and related handling</u>
	<u>Simplify Recovery function</u>
	<u>Allow ATF e-Tags to be Terminated</u>
	<u>Allow Source or Sink to modify DYNAMIC e-Tag with actual data</u>
	<u>Transmission Allocation must be &gt; energy profile.</u>
	<u>Validations in INT-007-1 R1.1, 1.2, and 1.3 are performed by the Agent and Authority Services</u>
	<u>Added SSL via HTTPS and client certificate requirement based on NAESB PKI standard</u>
	<u>Extend e-Tag creation to 168 hours into the past</u>
	<u>Extend e-Tag adjustment to 168 hours into the past for DYNAMIC e-Tags</u>
	<u>Current Level no longer distributed (calculated based on approved requests in request order)</u>
	<u>Change Tag Agent, Tag Approval, Tag Authority Services to Agent, Approval, Authority Services</u>
	<u>Change Tag to e-Tag</u>
	<u>Add Pseudo Tie tag type.</u>
	<u>Add functionality to allow Transmission Service Provider to modify their associated physical segment's Transmission Product Reference and Transmission Allocation(s) with no approval process for support of Order 890 Conditional Firm in sections 3.6.1.3, 4.6.1.1, and 4.6.1.2</u>
	<u>Transmission and Energy profiles must have same earliest start and latest end. Loss Accounting Profile must be bounded by (be within) these.</u>
<u>1.8.1</u>	<u>Modified CANCELLED definition</u>
	<u>Added statement regarding specification/schema relationship in section 1.4</u>
	<u>Modified sections 1.2, 1.4.1.2, 1.4.9.2, 2.7, 3.6.1.1.1, and 4.7 regarding Secondary Service URLs</u>
	<u>Modified section 1.4.9.4 to clarify the Authority Service archive requirements</u>
	<u>Made changes to sections 1.6.5.1, 2.6.5.2.1, 3.6.5.2.1, and 4.6.5.2.1 to support a 25 hour day</u>
	<u>Added language addressing profile start times and durations in section 2.6.1.1, 3.6.1.1,</u>
	<u>Clarified that entities may not be added or removed in profile change requests in section 2.6.1.3, 3.6.1.3, and 4.6.1.2 and deleted text in 3.6.2.2</u>
	<u>Removed the requirement to include a reason when withdrawing a request in section 2.6.3.2, 3.6.3.2, and 4.6.3.2</u>
	<u>Minor wording correction in 3.4</u>

	<u>Removed a validation item in section 3.6.3.1</u>
	<u>Corrected the spelling of Authority Service Operator in several places and added to definitions</u>
	<u>Added requirement for Authority Service to set ActOnByTime and TimeClassification in section 3.6.3.2 and in 3.6.3.3</u>
	<u>Added requirement for asynchronous response in section 3.6.5.2</u>
	<u>Deleted bullet item from section 4.6.3.1</u>
	<u>Revised references to PKI in section 7.1.1</u>
	<u>Agent, Approval, Authority, and RAS references changed to Agent Service, Approval Service, Authority Service, and RA Service for clarity.</u>
	<u>TSP changed throughout to Transmission Service Provider for clarity</u>
	<u>Created Appendix A – Special Interconnection Implementation Requirements</u>
	<u>Modified 1.4.2.2 and 3.6.1.1.1 definition of duplicate row for the distribution list and modified the distribution list record example</u>
	<u>Added definition of Tagging Entity ID</u>
	<u>Modified 1.4.6 and 2.6.1.3 to clarify that e-Tag authors may adjust DYNAMIC type e-Tags after the fact (after the current scheduling period) in order to reflect metered values. This included language requiring the clearing of any previously existing reliability limits.</u>
	<u>Added Section 8 – Implementation Requirements</u>
	<u>Modified section 3.7 – added language from NAESB WEQ-004 regarding Authority Service implementation and performance</u>
	<u>Added Acronym column to Definitions Table in section 1.2</u>
	<u>Updated links in section 1.1.2</u>
	<u>Modified 1.4.6, 2.6.1.3, and 3.6.1.3 to clarify that e-Tag authors may not the Transmission Allocation profile for DYNAMIC type e-Tags after the fact (after the current scheduling period).</u>
	<u>Modified 3.6.1.3 to allow loss profile adjustments in a DYNAMIC type e-Tag ATF adjustment request.</u>
	<u>Eliminated “spare” column in change table</u>

## 1.2 Definitions

Term	Definition
<del>{Source BA, Sink BA, PSE} Code</del>	<del>Entity Code defined in the Electric Industry Registry</del>
<del>ACTIVE</del>	<del>An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.</del>
<del>Active Approval</del>	<del>An approval or denial that occurred through an entity's deliberate indication of their intent.</del>
<del>Approval Entity</del>	<del>Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.</del>
<del>Approval Rights</del>	<del>The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.</del>
<del>Approval State</del>	<del>The State communicating an Approval Entity's willingness to implement a particular Request.</del>
<del>Approval State Type</del>	<del>A description of the manner in which an Approval Entity's State was set.</del>
<del>APPROVED</del>	<del>Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, TSP, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.</del>
<del>Arranged Interchange</del>	<del>The state where the Interchange Authority has received the Interchange information (initial or revised).</del>
<del>Asynchronous</del>	<del>A two-part communication, involving a request message followed by a separate response message.</del>
<del>Author Rights</del>	<del>The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.</del>
<del>Balancing Authority (BA)</del>	<del>A function associated with an electrical system bounded by interconnection (tie line) metering and telemetry.</del>
<del>Balancing Authority Area (BAA)</del>	<del>The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load resource balance within this area.</del>
<del>Base Profile</del>	<del>The profile associated with the new e-Tag, as originally requested.</del>
<del>Block Start Time</del>	<del>See Tag Start Time</del>

CANCELLED	Final Composite State that results when the e-Tag Author issues a Request Terminate Tag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Authority sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.
COMMFAIL	A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.
Composite State	This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.
CONFIRMED	The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.
Correction	A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.
Current Level	<p>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</p> <p>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances ("in-kind" losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</p>
DC Tie Operator	An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.
DELIVERED	Delivery State indicating that a particular Request was distributed to and received by a party.
Delivery State	A value used to provide information about a party's receipt of a particular Request.
DENIED	Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will

	<del>become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.</del>
Electric Industry Registry	<del>Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.</del>
e-Tag	<del>Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.</del>
Exception Profile	<del>A profile containing time specific changes to original profile values</del>
Exchange	<del>Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.</del>
EXPIRED	<del>Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.</del>
Financial Path	<del>Path defining the financially responsible parties of a transaction, detailing ownership of energy across physical movement of energy as well as purely financial.</del>
Generation Providing Entity (GPE)	<del>Merchant selling energy from owned, affiliated, or contractually bound generation.</del>
Implement	<del>Allow energy to be scheduled as described.</del>
IMPLEMENTED	<del>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.</del>
In-Kind Losses	<del>Transmission losses delivered coincident with energy delivery.</del>
Individual Approval State	<del>The Approval State associated with a specific party to the e-Tag.</del>
Individual Delivery States	<del>The Delivery State associated with a specific party to the e-Tag.</del>
Interchange Distribution Calculator (IDC)	<del>NERC tool used to determine curtailments during TLR.</del>
Interchange Transaction	<del>A business exchange between two parties that result in the physical flow of energy from one point to another; a strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, any such flow utilizing Point to Point service shall be considered an Interchange Transaction.</del>
INVALID	<del>Delivery state indicating that a party received a request distribution,</del>

	<del>but felt it was not syntactically or semantically correct</del>
<del>Load Serving Entity (LSE)</del>	<del>Marketer purchasing energy with the intent to deliver to and serve an affiliated or contractually bound load.</del>
<del>Market Entity</del>	<del>PSE, GPE, or LSE</del>
<del>Market Level</del>	<del>Desired energy profile for the transaction; level of market desired flow.</del>
<del>Maximum Reservation Capacity</del>	<del>The commitment of transmission resources to support a particular transaction; typically the same as actual flow.</del>
<del>Minute Boundary</del>	<del>Date/Time value “seconds” are zero.</del>
<del>NA</del>	<del>Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.</del>
<del>OVERRIDE</del>	<del>Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.</del>
<del>PASSIVE</del>	<del>Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.</del>
<del>Passive Approval</del>	<del>An approval that occurred through the expiration of a Request’s evaluation window without an active approval; set automatically by the Authority when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).</del>
<del>Passive Denial</del>	<del>A denial that occurred through the expiration of a Request’s evaluation window without an active approval or denial; set automatically by the Authority when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and TSP.</del>
<del>PENDING</del>	<del>Initial Request State and Approval State.</del>
<del>Physical Path</del>	<del>The source to sink route (via intermediate transmission paths) between generation and load.</del>
<del>Profile</del>	<del>A time/level matrix that defines an energy flow or other related information.</del>
<del>Purchasing-Selling Entity (PSE)</del>	<del>Any entity eligible to apply for an order requiring a Transmitting utility to provide Transmission Services under Section 211 of the Federal Power Act.</del>
<del>QUEUED</del>	<del>Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.</del>
<del>Ramp Start and Stop</del>	<del>The times determined using the e-Tag Start and Stop times in</del>

Times	conjunction with the supplied or default ramp durations using the methodology defined in this specification.
Reliability Authority Service (RAS)	Service used to collect transaction information for analysis, particularly with regard to system security.
Reliability Coordinator (RC)	An entity that provides the reliability assessment and emergency operations coordination for a specific portion of an interconnection.
Reliability Entity	BA, SE, or TSP
Reliability Level	Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.
Request	An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.
Request For Interchange (RFI)	A collection of required data, as defined in Appendix C of the NAESB Coordinate Interchange standard, necessary for the purpose of submitting to the Interchange Authority as an Arranged Interchange.
Request State	The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.
Scheduling Entity (SE)	Scheduling Entity—Reference in the e-Tag for the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.
Security Key	A security token, used to authenticate an entity involved in the e-Tag messaging system
Service	One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority)
Sink	Final point of delivery for a transaction.
Sink Balancing Authority (Sink BA)	The Balancing Authority metered area in which load is located
Source	Initial point of supply for a transaction.
Source Balancing Authority (Source BA)	The Balancing Authority metered area in which generation is located.
State	Either the Request State, Composite State, Individual Delivery State, or Individual Approval State.
Straddle Ramp	Ramp that divides the start ramp duration equally across the profile

	<del>block start or end time.</del>
<del>STUDY</del>	<del>The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.</del>
<del>Synchronous</del>	<del>Message type in which the requesting message is responded to within the same connection.</del>
<del>Tag</del>	<del>e-Tag</del>
<del>Tag Agent Service (Agent)</del>	<del>Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority and to receive State information for these requests.</del>
<del>Tag Approval Service (Approval)</del>	<del>Software component used to indicate individual approval entity responses when requested by Authority Service, as well as submit Profile Changes.</del>
<del>Tag Author</del>	<del>Entity that creates and submits an e-Tag; the caller of the Request NewTag method.</del>
<del>Tag Authority Service (Authority)</del>	<del>Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession</del>
<del>Tag Code</del>	<del>7-Character code used as part of the e-Tag ID to identify a transaction.</del>
<del>Tag ID</del>	<del>Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.</del>
<del>Tag Start Time</del>	<del>The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.</del>
<del>Tag Stop Time</del>	<del>The latest time listed in any part of a tag, including energy, transmission, and loss accounting.</del>
<del>TERMINATED</del>	<del>Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-</del>

	Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).
Termination Time	The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.
Test e-Tag	An e-Tag used for diagnostic purposes; does not represent actual transacted business.
Title Transfer	An exchange of energy ownership; may or may not be associated with a physical movement of energy.
Transaction Information System (TIS)	Transaction Information System — currently implemented as e-Tagging.
Transmission Allocation	Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.
Transmission Customer (TC)	A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.
Transmission Service Provider (TSP)	A registered entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.
Universal Coordinated Time (UTC)	Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).
Valid	Passed syntax checks by an e-Tag Service (i.e. not invalid)
Viewing Rights	The rights of an entity to view transaction details.
WITHDRAWN	Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

<u>Term</u>	<u>Acronym</u>	<u>Definition</u>
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<u>{ Source BA, Sink BA, PSE } Code</u>		<u>Entity Code defined in the Electric Industry Registry</u>
<u>ACTIVE</u>		<u>An Approval State Type indicating that a party has specifically indicated their willingness or unwillingness to implement a particular Request.</u>
<u>Active Approval</u>		<u>An approval or denial that occurred through an entity's deliberate indication of their intent.</u>
<u>After-the-Fact</u>	<u>ATF</u>	<u>A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.</u>
<u>Approval Entity</u>		<u>Entities identified on the transaction path of an e-Tag that have been authorized with approval rights by NERC/NAESB standards.</u>
<u>Approval Rights</u>		<u>The rights that an entity has to approve, deny, curtail, or otherwise modify an e-Tag.</u>
<u>Approval State</u>		<u>The State communicating an Approval Entity's willingness to implement a particular Request.</u>
<u>Approval State Type</u>		<u>A description of the manner in which an Approval Entity's State was set.</u>
<u>APPROVED</u>		<u>Approval State indicating that an entity is willing to implement a Request. This is also the Request State and is achieved when either all entities with approval rights on the Request have submitted their approvals, or the market assessment period has expired and all reliability entities (BA, Transmission Service Provider, SE) have approved the Request and no market entities (GPE, LSE, or PSE whose transmission rights are cited) have denied the Request. Once a Request reaches this state, an e-Tag is created or modified as called for by the Request.</u>
<u>Arranged Interchange</u>		<u>The state where the Interchange Authority has received the Interchange information (initial or revised).</u>
<u>Asynchronous</u>		<u>A two-part communication, involving a request message followed by a separate response message.</u>
<u>Author Rights</u>		<u>The rights a Request author has to submit, view, receive updates regarding, request changes to, and withdraw a Request.</u>
<u>Authority Service Operator</u>		<u>Responsible for Authority Service report generation and retention and to respond to requests for override - typically the Sink Balancing Authority.</u>

<u>Balancing Authority</u>	<u>BA</u>	<u>The responsible entity that ingrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.</u>
<u>Balancing Authority Area</u>	<u>BAA</u>	<u>The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.</u>
<u>Base Profile</u>		<u>The profile associated with the new e-Tag, as originally requested.</u>
<u>Block Start Time</u>		<u>Represents the start time within a request. For RequestNewTag it is the Tag Start Time</u>
<u>CANCELLED</u>		<u>Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED prior to the e-Tag's ramp start time with the termination time in the Request set to the block start time of the e-Tag and the Request State becomes APPROVED. The Composite State of the e-Tag changes from CONFIRMED to CANCELLED as soon as the Request becomes APPROVED. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.</u>
<u>Carbon Copy List</u>	<u>CC</u>	<u>An optional list of entities (BA, Transmission Service Provider, or PSE) specified in an e-Tag that are provided with a copy of the e-Tag</u>
<u>COMMFAIL</u>		<u>A Delivery State indicating that communications were unable to be established between the sender of a message and the recipient.</u>
<u>Composite State</u>		<u>This is the overall state of the e-Tag which can have any of the following values: CONFIRMED, IMPLEMENTED, CANCELLED, PENDING, WITHDRAWN, TERMINATED, EXPIRED and DENIED.</u>
<u>CONFIRMED</u>		<u>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is greater than or equal to the current time, and which has not been CANCELLED or TERMINATED. This State may transition to IMPLEMENTED, CANCELLED, or TERMINATED.</u>

<u>Coordinated Universal Time</u>	<u>UTC</u>	<u>Time standard used by the e-Tagging System for communication purposes; also referred to as Greenwich Mean Time (GMT).</u>
<u>Correction</u>		<u>A change to a Request e-Tag's composition prior to the expiration of the approval window, as defined in NERC/NAESB standards.</u>
<u>Current Level</u>		<u>The current level is derived based upon all approved e-Tag Requests applied in RequestID order. The current level represents the intended energy transfer at specific points in time.</u>  <u>The initial current level is set to the market level for each base profile. The current level will vary by physical segment under certain circumstances (In-Kind losses for example). The current level may be modified by either approved market level changes or reliability limit changes. The current level is set to the lower of the Exception Reliability Limit or the Effective Market Level which is defined as the current Exception Market Level if one exists or, if none exists, then the Base Market Level.</u>
<u>DC Tie</u>		<u>A DC transmission facility; specifically, one that provides a connection between two different interconnections.</u>
<u>DC Tie Operator</u>		<u>An entity that operates a DC transmission facility; specifically, one that provides a connection between two different interconnections.</u>
<u>DELIVERED</u>		<u>Delivery State indicating that a particular Request was distributed to and received by a party.</u>
<u>Delivery State</u>		<u>A value used to provide information about a party's receipt of a particular Request.</u>
<u>DENIED</u>		<u>Approval State indicating that a party is unwilling to implement a particular Request. If one or more Approval Entities set their Approval State to DENIED then the resulting Request State will become DENIED upon the expiration of the Request's approval window. Once a Request achieves this state, it cannot transition to any other state.</u>
<u>Electric Industry Registry</u>	<u>EIR</u>	<u>Data set provided by the Electric Industry Registry vendor describing entity information, such as name, acronym, phone numbers, service URLs, etc... of registered participants.</u>

<u>e-Tag</u>		<u>Document describing a physical interchange transaction and its associated participants. An e-Tag is the result of one or more requests.</u>
<u>e-Tag Agent Service</u>		<u>Software component used to generate and submit new e-Tags, Corrections, and Profile Changes to an Authority Service and to receive State information for these requests.</u>
<u>e-Tag Approval Service</u>		<u>Software component used to indicate individual Approval Entity responses when requested by Authority Service, as well as submit Profile changes.</u>
<u>e-Tag Authority Service</u>		<u>Software component that receives Agent and Approval Requests and Responses and forwards them to the appropriate Approval Services. Also maintains master copy of an e-Tag (all associated Requests), the Composite State of the e-Tag, etc. and responds to queries regarding the e-Tags in its possession</u>
<u>e-Tag Code</u>		<u>Unique 7 character transaction identifier used as part of the Tag ID.</u>
<u>Exception Profile</u>		<u>A profile containing time specific changes to original profile values</u>
<u>Exchange</u>		<u>Amount of energy exchanged between two parties; encompasses both physical interchange and title transfers.</u>
<u>EXPIRED</u>		<u>Approval State and Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.</u>
<u>Financial Path</u>		<u>Path defining the financially responsible parties of a transaction, detailing ownership of energy across physical movement of energy as well as purely financial.</u>
<u>Generation Providing Entity</u>	<u>GPE</u>	<u>Merchant selling energy from owned, affiliated, or contractually bound generation.</u>
<u>Implement</u>		<u>Allow energy to be scheduled as described.</u>
<u>IMPLEMENTED</u>		<u>The Composite State of a tag for which the tag creation request is in a state of APPROVED, the ramp start time is less than the current time, and which has not been cancelled or terminated. This State may transition to TERMINATED.</u>
<u>In-Kind Losses</u>		<u>Transmission losses delivered coincident with energy delivery.</u>

<u>Individual Delivery States</u>		<u>The Delivery State associated with a specific party to the e-Tag.</u>
<u>Interchange Distribution Calculator</u>	<u>IDC</u>	<u>The mechanism used by Reliability Coordinators in the Eastern interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the distribution Factors for the Eastern Interconnection.</u>
<u>Interchange Transaction</u>		<u>An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. A strict definition would indicate that exchange must be from one Balancing Authority to another, but for the purposes of this document, <b>any</b> such flow between a source and a sink point shall be considered an Interchange Transaction.</u>
<u>INVALID</u>		<u>Delivery state indicating that a party received a request distribution, but felt it was not syntactically or semantically correct</u>
<u>Late</u>		<u>A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>Load Serving Entity</u>	<u>LSE</u>	<u>Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.</u>
<u>Market Entity</u>		<u>PSE, GPE, LSE, or TPSE</u>
<u>Market Level</u>		<u>Desired energy profile for the transaction; level of market-desired flow.</u>
<u>Market Operator</u>		<u>An entity responsible for the implementation of an organized market recognized the FERC.</u>
<u>Maximum Reservation Capacity</u>		<u>The commitment of transmission resources to support a particular transaction; typically the same as actual flow.</u>
<u>Minute Boundary</u>		<u>Date/time value where “seconds” are zero.</u>
<u>NA</u>		<u>Special Approval State or Approval State Type indicating that the entity does not have approval rights over the Request or that the Request has not yet been delivered to the entity.</u>
<u>NERC/NAESB Standards</u>		<u>NAESB Wholesale Electric Quadrant Business Practice Standards and NERC Reliability Standards for the Bulk Electric Systems of North America</u>

<u>New e-Tag Request</u>		<u>The initial submittal of Request for Interchange (RFI) to the e-Tag Authority Service</u>
<u>On-time</u>		<u>A Time Classification state assigned to e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>OVERRIDE</u>		<u>Approval State Type indicating the Approval State for the entity was manually overridden by the entity providing the Authority Service.</u>
<u>PASSIVE</u>		<u>Approval State type indicating that the entity was unable to state their intentions within the assessment period and the system has made an automated decision on their behalf.</u>
<u>Passive Approval</u>		<u>An approval that occurred through the expiration of a Request's evaluation window without an active approval; set automatically by the Authority Service when the expiration occurs. Passive approval is only applicable to non-reliability entities such as GPE, LSE, and PSE (whose transmission rights are cited).</u>
<u>Passive Denial</u>		<u>A denial that occurred through the expiration of a Request's evaluation window without an active approval or denial; set automatically by the Authority Service when the expiration occurs. Passive denial is only applicable to reliability entities such as BA, SE, and Transmission Service Provider.</u>
<u>PENDING</u>		<u>Initial Request State and Approval State.</u>
<u>Physical Path</u>		<u>The source to sink route (via intermediate transmission paths) between generation and load.</u>
<u>Profile</u>		<u>A time/level matrix that defines an energy flow or other related information.</u>
<u>Purchasing-Selling Entity</u>	<u>PSE</u>	<u>The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.</u>
<u>QUEUED</u>		<u>Delivery State indicating the Request is scheduled for delivery but has not yet been successfully delivered.</u>
<u>Ramp Start Time</u>		<u>The time determined using the Tag Start Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.</u>

<u>Ramp Stop Time</u>		<u>The time determined using the Tag Stop Time in conjunction with the supplied or default ramp durations using the methodology defined in this specification.</u>
<u>Reliability Authority Service</u>	<u>RA Service</u>	<u>Service used to collect transaction information for analysis, particularly with regard to system security.</u>
<u>Reliability Coordinator</u>	<u>RC</u>	<u>The entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.</u>
<u>Reliability Entity</u>		<u>BA, RC, SE, or Transmission Service Provider</u>
<u>Reliability Level</u>		<u>Profile at which a transaction may flow, based on reliability considerations; limit of energy flow.</u>
<u>Request</u>		<u>An electronic notation of a particular desired action with regard to a new or existing interchange transaction. An APPROVED Request results in either the creation of an e-Tag or the modification of an existing e-Tag.</u>
<u>Request For Interchange</u>	<u>RFI</u>	<u>A collection of required data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing authority. For the purposes of this document, an RFI documents the deemed electrical flow between a source point and a sink point.</u>
<u>Request State</u>		<u>The overall status of a Request which can be any of the following: PENDING, APPROVED, WITHDRAWN, EXPIRED, or DENIED.</u>
<u>Scheduling Entity</u>	<u>SE</u>	<u>The NERC glossary defines an SE as an entity responsible for approving and implementing Interchange Schedule. For purposes of this document, a Scheduling Entity is referenced in the e-Tag Data Model as the Balancing Authority responsible for the bulk transmission system over which a transmission segment flows. The SE may also be an entity performing this function on behalf of the Balancing Authority and must be defined as performing that function in the Electric Industry Registry.</u>
<u>Secondary</u>		<u>A single URL registered in conjunction with an entity's</u>

<u>Service URL</u>		<u>Service URL for a secondary agent or approval service. This secondary service receives a copy of all e-Tag request messages sent by an Authority Service to the Service URL and any callback messages in which the secondary service was identified in the query as the target. A single URL registered in conjunction with an Agent or Approval Service URL for a secondary Agent or Approval Service. This secondary service receives a copy of all e-Tag request messages from the Service URL, sent by an Authority Service to the Service URL. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the "Forwarding URL" field is used for this purpose. The manner in which the Secondary Service URL is configured is dependent on the registry implementation; with the registry that is in-use for e-Tag version 1.8.1, the "Forwarding URL" field is used for this purpose.</u>
<u>Security Key</u>		<u>A security token, used to authenticate an entity involved in the e-Tag messaging system</u>
<u>Service</u>		<u>One of four types of computer systems used in the e-Tag messaging system (Tag Agent, Authority, Approval, Reliability Authority Services)</u>
<u>Service URL</u>		<u>The main URL registered for an entity's e-Tag service implementation.</u>
<u>Sink</u>		<u>Final point of delivery for a transaction.</u>
<u>Sink Balancing Authority</u>	<u>Sink BA</u>	<u>The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)</u>
<u>Source</u>		<u>Initial point of supply for a transaction.</u>
<u>Source Balancing Authority</u>	<u>Source BA</u>	<u>The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.)</u>
<u>State</u>		<u>Either the Request State, Composite State, Individual Delivery State, or Approval State.</u>
<u>Straddle Ramp</u>		<u>Ramp that divides the start ramp duration equally across the profile block start or end time.</u>

<u>STUDY</u>		<u>The approver has actively decided to defer their decision to approve or deny until a later time within their approval window, but wishes to communicate their acknowledgement of the request back to the sender.</u>
<u>Synchronous</u>		<u>Message type in which the requesting message is responded to within the same connection.</u>
<u>Tag Author</u>		<u>Entity that creates and submits an e-Tag; the caller of the Request NewTag method.</u>
<u>Tag ID</u>		<u>Identifier of the e-Tag represented by combining Source BA code, PSE code, an e-Tag Code, and Sink BA code.</u>
<u>Tag Start Time</u>		<u>The earliest time listed in any part of a tag, including energy, transmission, and loss accounting.</u>
<u>Tag Stop Time</u>		<u>The latest time listed in any part of a tag, including energy, transmission, and loss accounting.</u>
<u>Tagging Entity ID</u>		<u>Unique numeric identifier for each tagging entity as defined in the Electric Industry Registry (EIR)</u>
<u>TERMINATED</u>		<u>Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time except in the case of ATF e-Tags which may be terminated up to 168 hours into the past. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its block start time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).</u>
<u>Termination Time</u>		<u>The time at which the IMPLEMENTED e-Tag will be transition to TERMINATED. The earliest termination time of approved termination requests associated with the e-Tag is the termination time for the e-Tag.</u>
<u>Test e-Tag</u>		<u>An e-Tag used for diagnostic purposes; does not represent actual transacted business.</u>

<u>Time Classification</u>		<u>Assigned at submittal to each e-Tag request by the Authority Service based on NERC/NAESB standards</u>
<u>Title Transfer</u>		<u>An exchange of energy ownership; may or may not be associated with a physical movement of energy.</u>
<u>Transaction Information System (TIS)</u>		<u>Transaction Information System – currently implemented as e-Tagging.</u>
<u>Transmission Allocation</u>		<u>Set by the e-Tag Author, it is a description of how a reservation or contract is being used in a particular e-Tag. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.</u>
<u>Transmission Customer</u>	<u>TC</u>	<u>A PSE specified as owner (rights holder) in a Transmission Allocation in the e-Tag. The PSE may or may not be the energy title holder.</u>
<u>Transmission Service Provider</u>		<u>The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements.</u>
<u>Valid</u>		<u>Passed syntax checks by an e-Tag Service (i.e. not invalid)</u>
<u>Viewing Rights</u>		<u>The rights of an entity to view transaction details.</u>
<u>WITHDRAWN</u>		<u>Final Request State that results when a request submitter (Tag Author or Adjustment requester) submits a WithdrawRequest message before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.</u>

### 1.3 Tagging Terminology

In an abstract sense, ~~Electronic Tagging's~~ this implementation an electronic Transaction Information System has the primary purpose ~~is~~ to create, manipulate, and maintain two objects – e-Tags and Requests. An e-Tag can be thought of as a collection of Requests, bundled together in one package and relating to a single transaction. Requests can be of various types, and each Request contains its own state and approval history. Each approved Request modifies the e-Tag that it is associated with in some way. E-Tags also maintain their own state (called Composite State), independent from the states of the various Requests that make up that e-Tag.

References to “time” in this document mean a specific date/time in most cases; e.g. ~~ramp start time, ramp stop time, e-~~ Ramp Start Time, Ramp Stop Time, Tag start time Start Time, etc.

The remainder of this section contains a list of useful terms and definitions relating to e-Tags and Requests.

**Request** - New e-Tags and changes to existing e-Tags are all initiated with a Request. An e-Tag is the composite result of all ~~APPROVED~~ APPROVED Requests related to that e-Tag. There are six types of requests:

**New e-Tag** – a request to implement a new Interchange Transaction as a physical energy flow, also called a Request for Interchange. An e-Tag that reaches an IMPLEMENTED state will usually transition through the following stages:

1. Request for Interchange – the Request created by the e-Tag Author.
2. Arranged Interchange - once the Authority Service receives the Request.
3. Confirmed Interchange - once the Request is approved.
4. Implemented Interchange – when the current time is past the e-Tag’s ramp start time.

**Curtailement** – a request to limit an energy flow through the limiting of an associated Interchange Transaction

**Reload** – a request to release a limit previously requested through a Curtail Request

**Adjustment** – a Request that modifies energy flow and/or transmission capacity of an Interchange Transaction in order that such a change may be implemented and resources committed

**Termination** – a Request that either reduces energy flow and transmission capacity of an e-Tag to zero for the life of the e-Tag prior to its start so that such a transaction is not started (CANCEL) or reduces energy flow and transmission capacity of an e-Tag to zero starting at a time indicated in the termination Request

that is after ramp start time and continuing for the life of the transaction (TERMINATION)

**Extension** – a Request that includes energy flow and/or transmission capacity for unscheduled hours of an Interchange Transaction, in order that such a change may be implemented and resources committed

**Submission time** – the time at which an e-Tag Author submits a Request to the Authority Service for processing ~~as~~. The submission time is determined by the Authority Service. Requests are categorized by submission time into one of three categories Time Classifications based on the ~~NERC/NAESB Interchange Standards'~~ timing tables. ~~These categories are:~~  
in NERC/NAESB Standards:

~~1. On-Time,~~

1. ~~-time~~
2. ~~Late, and~~
3. ~~After-The-the-Fact (ATF).~~

**Request State** – the overall status of the Request, based on the processing of the Request. Requests are categorized by Request State in the following ways:

**PENDING** - initial Request State

**WITHDRAWN** – final Request State that results when a Request Author submits a WithdrawRequest before the Request has reached any other final state (e.g., APPROVED, DENIED, etc.). This state may not transition to any other state.

**APPROVED** – final Request State that results when all entities with approval rights over a Request actively approve it or when no entities with approval rights actively deny the Request, all reliability entities approve the Request, and the Request's assessment period expires.

**DENIED** – final Request State that results when one or more Approval Entities set their Approval State to DENIED and the Request's assessment period expires.

**EXPIRED** – final Request State that results when one or more reliability Approval Services fail to actively respond to the IA's assessment distribution before the assessment period ends. Once a Request transitions to this state, it cannot transition to any other state.

**Individual Delivery States** – indicates the successful or unsuccessful transfer of a Request to an entity. The possible Delivery States are:

**QUEUED** – the Request is scheduled for delivery.

**INVALID** – the Request was perceived as invalid by the receiving entity and rejected.

**COMMFAIL** – the Request was undeliverable due to communication problems.

**DELIVERED** – the Request was successfully delivered.

**Individual Approval States** – indicates the intent of an entity to implement a Request. The possible Approval States are:

**NA** – no state is applicable, as the Request has not yet been successfully delivered to the entity or the entity does not have approval rights.

**PENDING** – no indication has been made to show whether the implementation of the Request is supported or not.

**APPROVED** - an indication of supporting the implementation of the Request.

**DENIED** - an indication of opposing the implementation of the Request.

**STUDY** - an indication that the Approval Entity was uncertain whether or not to support or oppose the Request. This state is treated the same as PENDING when the assessment period ends.

**EXPIRED** – an indication that an Approval Entity who is required to actively set Approval State did not actively set Approval State to APPROVED or DENIED before the assessment period ended.

**Individual Approval State Types** – indicates how an entity’s state was assigned. The possible Approval State Types are:

**Active** – an Approval Entity actively selected The Approval State.

**Passive** – the Approval State was passively selected due to a time elapse or other non-interactive manner.

**Overridden** – the Approval State was actively ~~selected~~ modified by the Sink Balancing Authority via its Authority Service acting on the behalf of an Approval Entity that was unable to act on their own.

**Composite State Types** – indicates the overall state of an e-Tag. The possible Composite States are:

**CONFIRMED** – Composite State of an e-Tag that results when the new e-Tag’s creation Request is in an APPROVED state and the e-Tag ramp start time is greater than the current time.

**IMPLEMENTED** – Composite State of an e-Tag that results when the new e-Tag's creation Request is in an APPROVED state and the e-Tag ramp start time is less than or equal to the current time.

**CANCELLED** – Final Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of CONFIRMED with the termination time in the Request set to the ~~block-start time~~ Tag Start Time of the e-Tag. The Authority Service sets the market level and transmission allocation of the e-Tag to zero. Once reached, this state may not transition to any other state.

**TERMINATED** – Composite State that results when the e-Tag Author issues a RequestTerminateTag message for an e-Tag with a composite status of IMPLEMENTED with the termination time set after the ~~block-start time~~ Tag Start Time of the e-Tag. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time. The termination time plus stop ramp duration must be greater than or equal to the current time. The Authority Service sets all market level and transmission allocation profiles of the e-Tag to zero at and after the termination time when the Request State becomes APPROVED. Once an e-Tag has reached this Composite State, it cannot transition to any other Composite State, and the e-Tag can only be adjusted between its ~~block-start time~~ Tag Start Time and the Request's termination time (i.e. it can no longer be extended past the Request's termination time).

**PENDING** - Initial Composite State

**WITHDRAWN** – The e-Tag Composite State transitions to WITHDRAWN when the new e-Tag creation Request transitions to WITHDRAWN.

**DENIED** – The e-Tag Composite State transitions to DENIED when the new e-Tag creation Request transitions to DENIED.

**EXPIRED** - The e-Tag Composite State transitions to EXPIRED when the new e-Tag creation Request transitions to EXPIRED.

## 1.4 System Concepts

The functional requirements address the following basic information and data exchange needs:

- Initial creation of an e-Tag Request representing the transaction,
- Dissemination of the e-Tag Request to all parties directly involved in the transaction,

- Collection of Approval States from all parties with approval rights,
- Forwarding of the Request and e-Tag to appropriate entities and tools, and
- Modifications to the e-Tag throughout its lifetime.

This document approaches the functional requirements for electronic ~~Tagging~~ tagging by defining four services: the Agent Service, the Authority Service, the Approval Service, and the Reliability Authority Service.

The functionality that must be supported by each of these services and the entity responsible for providing for these services are defined. There are no restrictions with regard to who may provide these services (i.e., the responsible entity or any one of a number of third-party service providers) nor any restrictions on which services (or all) that a third-party service provider could offer. **Under no circumstances shall a provider of any of these services require any other service provider to implement additional features or functionality beyond these specifications as a condition to properly performing the obligations associated with that service.**

This specification is accompanied by an XML schema. The schema is intended to reflect the specification. Should the specification and schema conflict, the specification is the ruling document.

## 1.4.1 System Architecture

### 1.4.1.1 Agent Service

The Agent Service provides the ability for initial creation of an ~~electronic e-Tag~~ and the transfer of that information to the appropriate Authority Service. Purchasing-Selling Entities (PSEs) and all other e-Tag Authors are responsible for providing this service directly or by arranging with a third party to provide this service as their agent. E-Tags created by the Agent Service are forwarded to the Authority Service associated with the Sink Balancing Authority (Sink BA). The Agent Service provides a mechanism for the e-Tag Author to view the Approval State of its transactions via an unsolicited notification mechanism. The Agent Service also provides facilities for the e-Tag Author to make Corrections to e-Tags prior to confirmation, as well as request a Profile Changes to any of their e-Tags following confirmation. These corrections and modifications are also sent and processed via the Authority.

~~The Agent Service is referred to throughout this document as Agent.~~

### 1.4.1.2 Authority Service

The Authority Service is the focal point for all interactions with an e-Tag and maintains the single authoritative “copy of record” for each e-Tag received. Every Sink Balancing Authority is responsible for ~~providing this service directly or by arranging with a third party to provide this service as its agent~~ registering an URL of an Authority Service. The Authority Service forwards all valid received e-Tag Requests to ~~the Approval Service associated with~~ each entity identified in the transaction as having “approval” or “viewing” rights over that Request (see section 3 for distribution list determination), and collects approvals/denials issued by these Approval Services. Based on time and/or the messages received from the Approval Services, the Authority Service arbitrates and sends the final disposition of the Request to ~~the originating Agent and all Agent and Approval Services associated with the transaction, and to the sink BA’s designated forwarding location (e.g., RAS or BA’s Reliability Coordinator)~~ each entity in the distribution list. The Authority Service also provides the capability for both Agent and Approval Services to interrogate the current Approval State of any transaction request on demand.

~~The Authority Service is referred to throughout this document as Authority.~~

### 1.4.1.3 Approval Service

The Approval Service receives e-Tag Requests submitted by ~~Agents~~ Agent Services via the appropriate Authority Service. The Approval Service also provides a means for an entity to receive notification of transactions in which they are involved, as well as send approve or deny responses to an ~~Authority’s~~ Authority Service’s presentation of a valid Request (if they have approval rights over the Request). Additionally, the Approval Service allows entities to curtail or otherwise modify the profile of an existing e-Tag (if they have rights to do so). Balancing Authorities, Transmission Service Providers, and Purchasing-Selling Entities are responsible for providing this service directly or for arranging with a third party to provide this service as their agent. Finally, Transmission Service Providers may use the Approval Service to issue corrections or adjustments.

~~The Approval Service can be referred to throughout this document as Approval.~~

### 1.4.1.4 Reliability Authority Service

Reliability Authority Services receive all Requests from ~~Authorities~~ Authority Services. These e-Tags inform the Reliability Authority Service of the expected flows a transaction will create, and are used by Reliability Coordinators to mitigate constraints should the need arise.

The Reliability Authority Service can be referred to throughout this document as RASRA Service.

## 1.4.2 Tag Identification

All e-Tags and e-Tag creation Requests shall be uniquely identified by an e-Tag ID. Electronic communications between Agent, Authority, and ~~Approvals~~ Approval Services shall require the association of an additional Security Key or Keys to control all

interactions related to a given transaction. The following subsections describe the requirements for the creation of the e-Tag ID and Security Key.

### 1.4.2.1 E-Tag IDs

Every transaction shall be identified by a unique e-Tag ID based on key attributes of the transaction as specified in the Data Model:

- Source Balancing Authority Entity Code
- PSE Entity Code (e-Tag Author PSE)
- Unique transaction identifier (e-Tag Code)
- Sink Balancing Authority Entity Code

The “Source Balancing Authority” shall be defined as the host Balancing Authority in which the generation is located. The “Sink Balancing Authority” shall be defined as the host Balancing Authority in which the load is located. The “e-Tag Author PSE” shall be defined as the PSE who is creating and submitting the ~~new~~New e-Tag Request to the Authority Service.

Since this e-Tag ID and the contents of the e-Tag contain potentially commercially sensitive information, all ~~components of the e-Tagging Information System~~ Tag services shall treat such information as confidential.

All services shall reject any attempt to submit as new an e-Tag ID that is identical to an existing e-Tag creation Request’s e-Tag ID for a period of one (1) year from the stop date and time associated with the existing e-Tag. ~~Agents~~ Agent Services shall be required to ensure that each e-Tag ID is unique for a period of not less than one (1) year from the stop date and time associated with the last transaction that was assigned that e-Tag ID.

### 1.4.2.2 Security Keys

The electronic exchange of e-Tag information shall require the assignment of unique “Security Keys” to be associated with the transaction. Security Keys control communication between the Agent, Authority, Approval, and ~~RASs~~ Reliability Authority Services. The Security Key is a unique 12 character alphanumeric (0–9, A–Z, a–z; case sensitive) security token.

The Agent generates a unique Security Key to associate with the e-Tag at the time of submission. All subsequent messages exchanged between the Agent and ~~the~~ Authority Services in regard to the e-Tag shall refer to both the e-Tag ID and Security Key assigned by the e-Tag Author’s Agent Service.

The Authority Service shall also generate one unique Security ~~Keys~~ Key for each entry in the distribution list to be associated with the e-Tag on the initial ~~transmission~~ distribution of the e-Tag ~~to each of the appropriate Agents or Approvals~~. All subsequent messages exchanged between the Authority and ~~a given~~ Approval Services in regard to the e-Tag

shall refer to both the e-Tag ID and Security Key assigned by the Sink Balancing Authority's Authority [Service](#).

In certain situations, Security Keys can exist independent of e-Tag IDs (such as the Get e-Tags and Get e-Tag IDs requests). Those situations will be described in detail in the appropriate sections of this document.

The Security Key must either be random or have the appearance of randomness. Although schemes may be used to generate a key, these schemes must not be obvious to the interested observer (for example, APR05991240X is obviously a date and time, but a ciphered version of this, KYZ71434450H, might not be). The Security Key must be considered a security mechanism, and as such, must not be easily deducible by parties lacking first-hand knowledge of the specific Security Key generation mechanism employed by the system.

It should be noted that each Authority [Service](#) is assigned by NERC a unique Security Key for interaction with the IDC. This key is only to be used for communication with the IDC, and must be kept confidential. This key secures communications from the IDC to each Authority [Service](#) as well. NERC will notify each registered Authority [Service](#) with that ~~Authority's~~ [Authority Service's](#) unique Security Key to be used in all messages between the IDC and Authority [Service](#).

### 1.4.3 Test e-Tags

~~An e-Tag can be designated as a~~ [Test e-Tags are e-Tags used](#) for the purpose of troubleshooting a system or component of the system. All ~~services (Tag Agent, Approval, and Authority, and Approval)~~ [Services](#) shall accept and process Test e-Tags and in an identical fashion to all other e-Tags, with the following exceptions:

- Viewing applications MUST indicate to the user that the e-Tag is a Test e-Tag.
- Test e-Tags do not require an approving party to evaluate the e-Tag within the Assessment Time as defined in NERC/NAESB Standards.
- Test e-Tags must not be treated as actual e-Tags (the information contained within a Test e-Tag must not be used to make any business decisions).
- The Authority [Service](#) shall not initiate the forwarding of these test e-Tags to the [RASRA Service](#) at any time.
- Test e-Tag Requests always transition to a Request State of APPROVED on expiration of the assessment period and no approval entities have denied the Request or when all approval entities have approved the Request.

In addition, the following rules must be observed with regard to test e-Tags:

- Test e-Tags must ONLY be used for troubleshooting purposes. System ~~Development, Training~~ [development, training, and Demonstration](#) [demonstration](#), as well as any other non-troubleshooting related need must NOT utilize the Test e-Tag feature.
- A particular PSE (as listed in the ~~Electric Industry Registry~~ [EIR](#)) may only issue a total of ten (10) Test e-Tags per clock hour. Any Test e-Tag submissions exceeding this number may be rejected at the option of the service being sent the Test e-Tag.

- Test e-Tags may be rejected at the option of the service provider if they are sent during the last twenty minutes of a clock hour (i.e., xx:40 – yy:00).
- 

Test e-Tags must not reflect authorship that does not match the listed service affiliation in the [Electric Industry Registry EIR](#). If a Test e-Tag is sent from an external system to another system, and the e-Tag Author is a registered user of the receiving system, the receiving system may reject the e-Tag. For example, if PSE XXX is registered to use vendor X, and a message comes in from vendor Y claiming to be authored by PSE XXX, vendor X may reject the message.

## 1.4.4 Communications

All e-Tag messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, procedures on remote machines are invoked, passing any needed data as input parameters to the function or method. When the function is complete, it returns the result of its processing.

### 1.4.4.1 Method Types

The e-Tag ~~uses~~ [services use](#) various types of methods for various purposes. The methods can be broken up into the following categories.

#### 1.4.4.1.1 Requests

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

#### 1.4.4.1.2 Request Distributions

Request Distributions are the methods used to send requests to all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

#### 1.4.4.1.3 Actions

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### 1.4.4.1.4 Information Distributions

Informational distributions are the methods used to send information related to the State of a particular Request or set of transactions. These are sent to entities to alert them of particular Request's implementation or withdrawal, as well as specific entities approvals and denial of a Request.

#### 1.4.4.1.5 Queries

Query methods are used to search and recover data from an Authority [Service](#) or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods,

meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query.

#### 1.4.4.1.6 Callbacks

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

#### 1.4.4.2 Message Size Limitations

In order to ensure reliable operation of the e-Tag systems, the following limitations of message size are to be observed:

- Any RequestNewTag or RequestProfileChange specifying a duration greater than 33 days in length may not have a Content-Length greater than 512000 characters. Agent systems should not issue such Requests, and Authorities should reject such Requests if they are received.

### 1.4.5 Financial and Physical Paths

Paths define the flow of both energy flow and fiduciary responsibility. Financial ~~path~~Path components are referred to as **market segments**, while ~~physical-path~~Physical Path components are called **physical segments**.

A ~~Physical-Segment~~physical segment may be one of three types:

- **Generation** that is supplying energy for delivery,
- **Transmission** that is wheeling the energy from one point to another, and
- **Load** that is consuming the delivered energy.

Market ~~Segments~~segments are financial responsibilities for the receipt and/or delivery of the energy. A ~~Market Segment~~market segment typically contains ~~Physical-Segments~~physical segments (illustrating holding of title across physical movement of energy), but may contain no such ~~Physical-Segments~~physical segments (illustrating a non-physical title-holder). Physical ~~Segments~~segments must be contained within ~~Market Segments~~market segments.

An e-Tag may have only one ~~Generation~~generation segment and one ~~Load-Segment~~load segment. When ordered, these segments must be indicated as the first and last physical segments in the path, respectively.

For a detailed discussion of Paths and how they function, please see **Section 6.2.2, Market Segments**, and **Section 6.2.3, Physical Segments**.

### 1.4.6 Profile Descriptions

~~Profile-Sets~~Profiles define the level at which transactions should run, as well as the factors that set those levels. For detailed discussions on how profiles function please see section **6.1.4**.

In general, a profile will have three levels

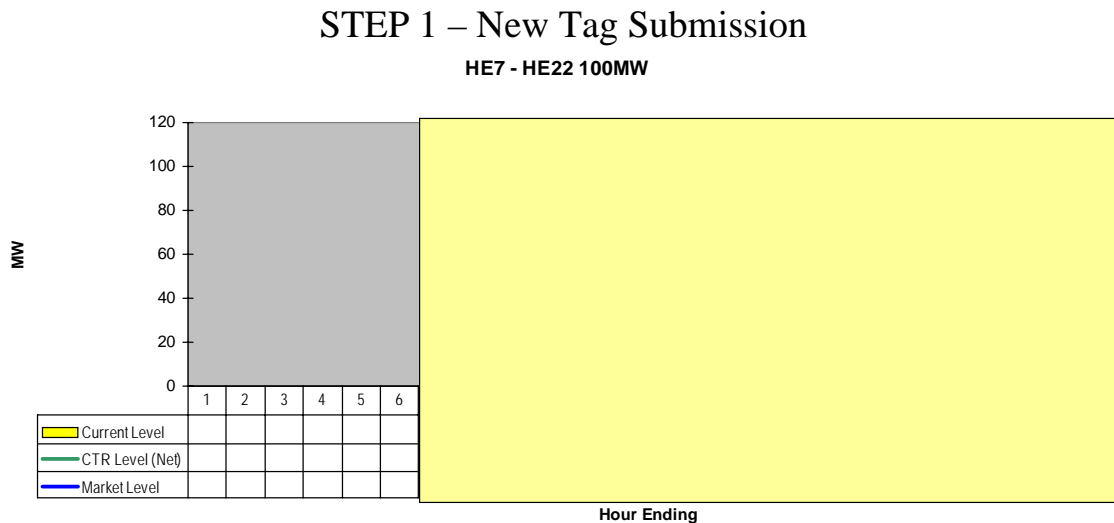
- The energy flow
- The maximum level at which the energy may reliably flow (default is unlimited)

- The transmission capacity committed to the transaction by the e-Tag Author as a Transmission Allocation

Tag Authors can modify the energy profile up or down without exceeding the Transmission Allocation. Should a curtailment occur for reliability reasons, then the reliability limit must be adjusted to become the new maximum level. The e-Tag Author can modify the energy profile on the e-Tag up or down even while under curtailment, but the reliability limit will always be the maximum level. The lowest of the reliability limits or the market level will indicate the actual flow on the e-Tag. For DYNAMIC type e-Tags, the e-Tag author, Source BA, or Sink BA may make market level profile adjustments after-the-fact (to reflect metered values) but may not adjust the transmission allocation profile. Any previously existing reliability limits must be cleared thus achieving both a reload and a profile change with one profile change request.

Profiles may optionally reflect ramp start and stop durations for each profile block. The ramp stop duration will be ignored on all blocks except for the last profile block. Only the ramp start duration will be used in energy level calculations for all other profile blocks. All ramps imply straddle ramps. Instantaneous ramps are indicated by a zero minute ramp duration. The ramp start and stop data represents minutes over which the generator will increase or decrease generation from the previous block level to the current block level. The ramp beginning and end times for each profile block can be calculated based on the ramp duration and profile block start and end times.

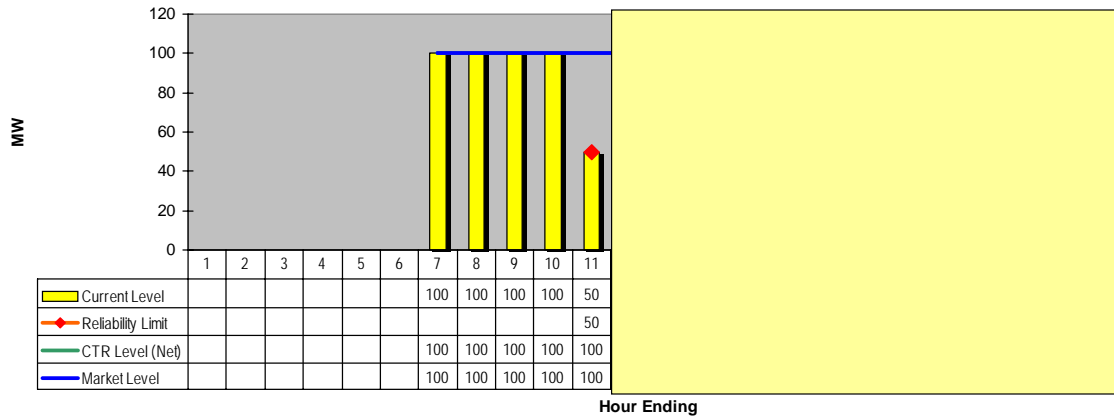
The following diagrams illustrate the relationship between these levels:



In Step 1, the e-Tag has been submitted, but has not yet run. The yellow overlay indicates points in the future.

## STEP 2 – Curtailment

Curtailed to 50MW at 10am



In Step 2, the e-Tag has been running and is curtailed.

## STEP 3 – Curtailment Continues

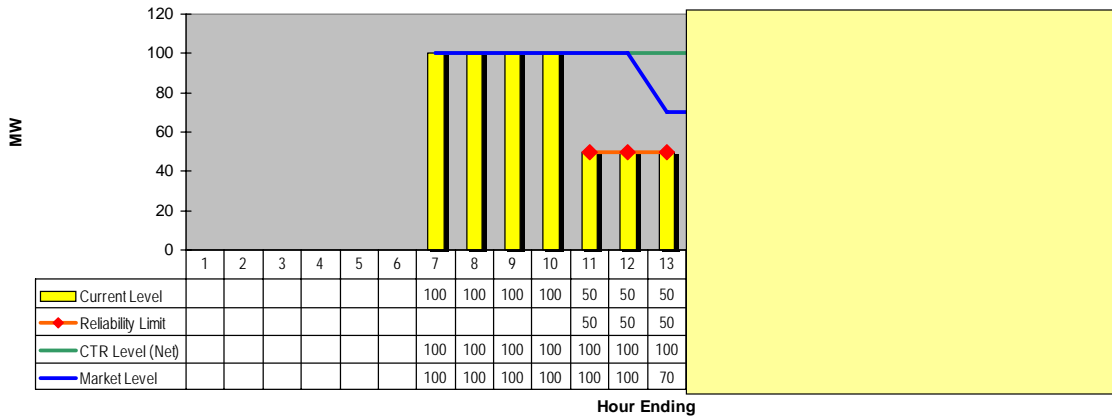
Reissued at each hour



In Step 3, the Curtailment continues and is reissued twice.

### STEP 4 – Tag Author Sets Reload Level

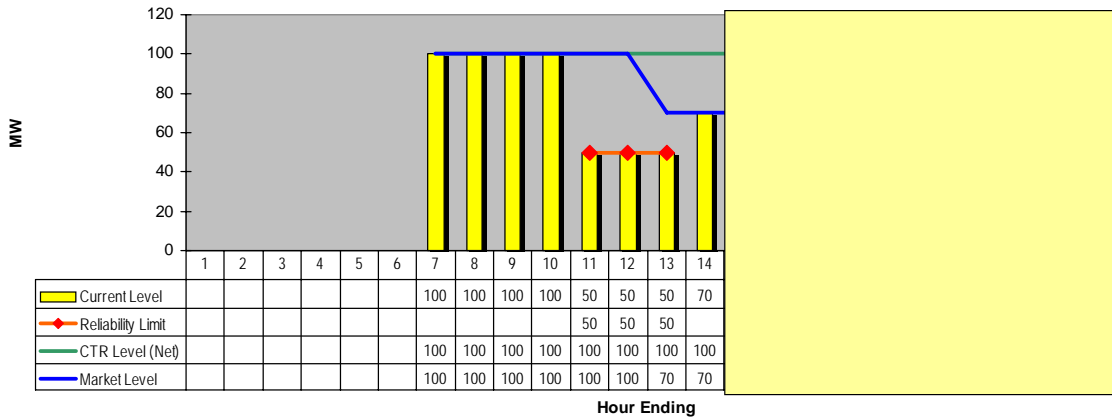
70MW until HE 18



In Step 4, the e-Tag Author elects to limit their transaction to a maximum reload of 70MW until HE 18.

### STEP 5 – TLR Released, Tag Partially Reloaded

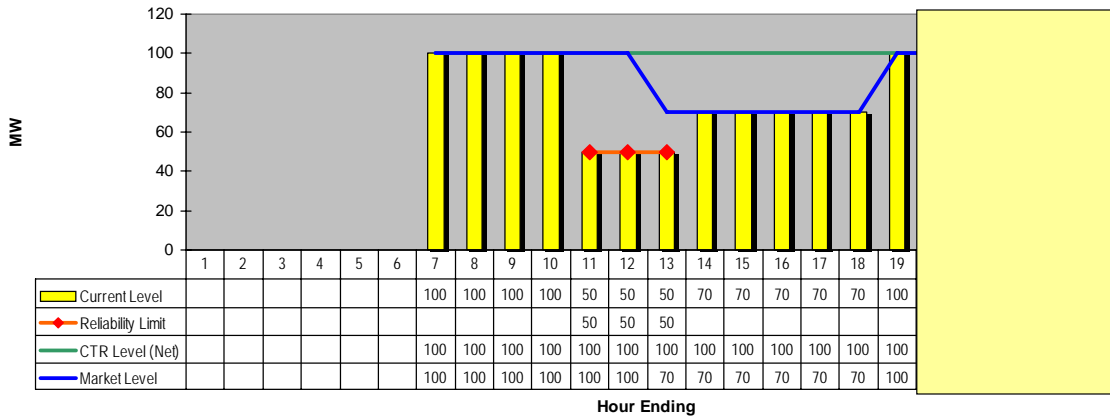
Reloaded to 70MW



In step 5, the e-Tag is Reloaded by the RC/BA to the 70MW level as specified.

### STEP 6 – Tag Fully Reloaded

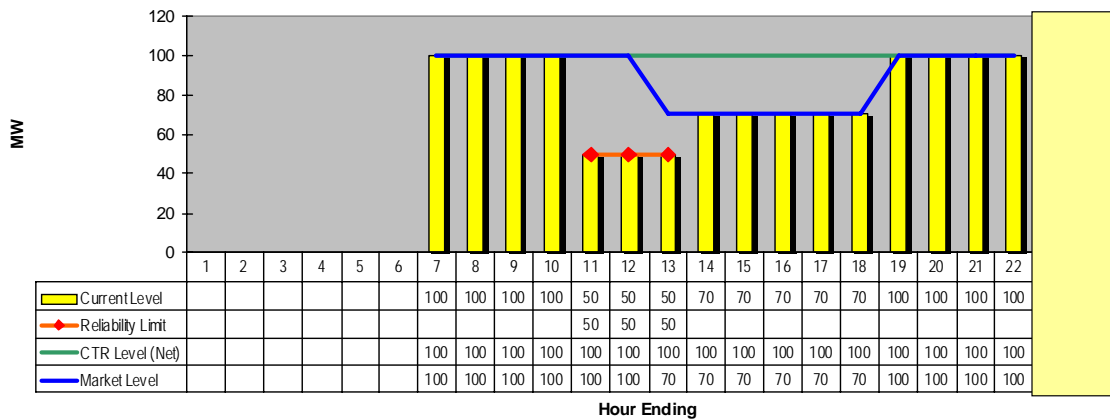
70MW until HE 18



In Step 6, the e-Tag is reloaded by the RC/BA to its previous 100MW level as specified.

### STEP 7 – Transaction Complete

70MW until HE 18

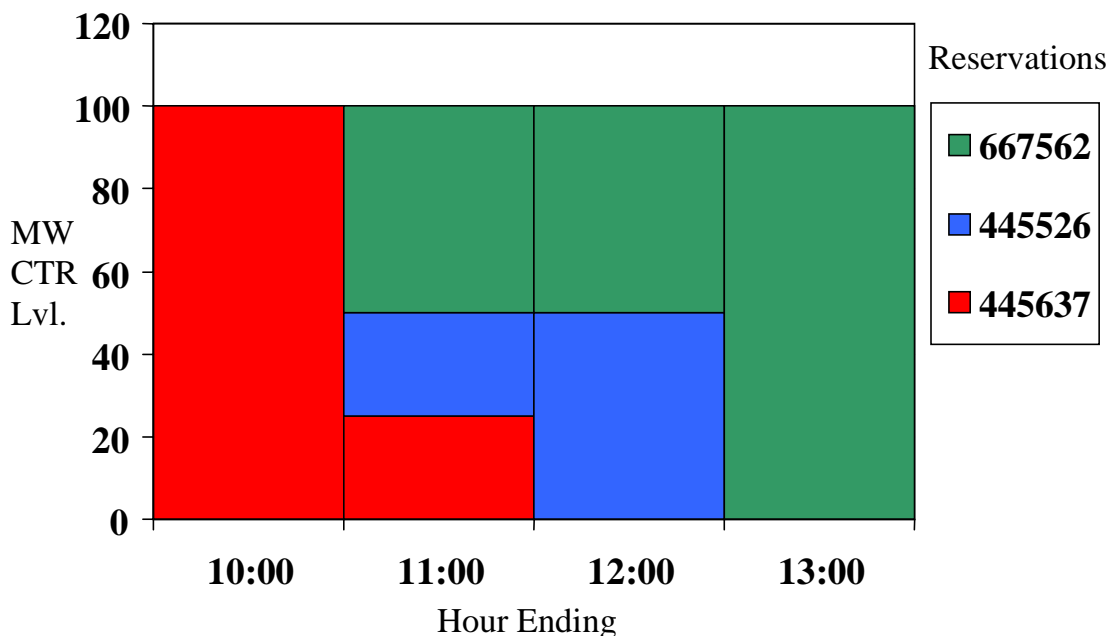


In Step 7, the e-Tag has completed.

## 1.4.7 Transmission Allocation

Transmission Allocation describes the manner in which an e-Tag Author specifies which transmission reservations will be used to support the capacity committed in a Transmission Service Provider’s associated profile. The Transmission Allocation allows the author to specify the duration and megawatt level of the capacity used from a transmission reservation to support the e-Tag transaction.

In the example below, an entity is supplying a total of 100 MW of transmission capacity over four hours by using three different reservations in combination:



For more detail on this topic, please see **Section 6.2.4, Transmission Allocations.**

### 1.4.8 Timing Requirements

To enforce Request submission and evaluation timing requirements, the Authority Service shall maintain system time to an accuracy of one (1) second traceable to the National Institute of Standards and Technology (NIST). Approval and AgentsAgent Services are encouraged to keep their time synchronized in this manner as well.

All times communicated through an e-Tag shall be noted in Universal Coordinated Time (UTC). User interfaces and local systems may reflect local time, however, any system using time zones other than UTC must properly convert those times into UTC prior to communicating with other systems.

NERC/NAESB Standards provide details on the manner in which timing requirements should be implemented.

#### 1.4.8.1 Approval of Reliability Changes

All profile changes that impact the Reliability Limits-Level profile (i.e., curtailments and reloads) must be actively approved in order to be implemented. Profile changes will not be implemented if either actively or passively denied.

## 1.4.9 Tag Auditing

Each service shall be responsible for keeping audit information describing its interactions with other services. These requirements are described below.

### 1.4.9.1 *Message Rejection Log*

Any service that rejects a message as containing a ~~Fault~~fault or an ~~Error~~error must log the type of rejection, the date/time of the rejection, the sending entity (if identifiable), and the e-Tag ID (if identifiable). This information must be kept available by written request for a minimum of ninety (90) days after the rejection.

### 1.4.9.2 *Historical e-Tag Archive*

Every service shall keep available for retrieval every e-Tag and associated messages received by the service until ninety (90) days past the e-Tag's stop date/time.

~~Authorities~~Authority Services must have this information available to Approval and Agent ~~systems~~Services through standard e-Tag querying mechanisms throughout the ninety-day period, as well as through written request by other parties who may require data but not be participants listed on the e-Tag (i.e., NERC). ~~Agent and Approvals~~Approval Services must have these e-Tags available by written request. Approval and Agent ~~systems~~Services making a request from the Authority Service for a certain time range must be provided with all e-Tag and associated messages associated with the requestor for that time range.

~~Messages sent from an authority service to a Secondary Service URL shall be kept for a minimum of seven (7) days from the time that the message was sent.~~

### 1.4.9.3 *Statistics*

Every service shall maintain statistical information as defined below. This information must be logged, as it occurs, NOT after the fact. In this manner, services may accurately reflect data before it is modified through overrides or updates. This information must be available by written request for a minimum of ninety (90) days in the form of reports.

These reports must be written based on the requests processed in one week (00:00 UTC Sunday to 23:59:59 UTC Saturday). This information must be available to parties who may require data but not be participants to any specific e-Tag (i.e., NERC).

- Number of LATE Requests, by requester
- Number of ATF Requests, by requester
- Number of return values of INVALID, by entity
- Number of return values of COMMFAIL, by entity
- Number of returned Faults, by entity.
- Number of Request Approval State Type of PASSIVE, by approver

#### 1.4.9.4 Authority Service Off-Line Archive

All ~~Authorities~~ Authority Services shall archive all message dialogues (all received and issued messages and their associated responses) ~~associated with a particular e-Tag~~, as follows:

- These message ~~logs~~ dialogues need not be available for online query, ~~however, upon written request from NERC, Authority operators~~
- Authority Service Operators must ~~be able~~ have the ability to supply written reports ~~within a reasonable amount of time (within one working week)~~ listing message traffic for a particular entity or transaction. ~~This information shall be kept from the implementation of the 1.7 Specification forward until such time this requirement is removed~~ within a reasonable amount of time (e.g., within seven business days).
- Authority Service Operators must retain message dialogues as specified in NERC/NAESB standards.

#### 1.4.10 Rounding

MW values specified in e-Tag profiles must sometimes be integrated into MWh values across appropriate schedule intervals. E-Tag profiles that start or stop within schedule intervals may result in fractional MWh values being calculated. These MWh values must be rounded to the nearest whole MWh (< .50 down, >= .50 up).

Calculation of aggregated data such as hourly, daily, monthly, and e-Tag totals must be performed in accordance with applicable NERC/NAESB ~~NERC~~ Coordinate Interchange Standards.

#### 1.4.11 Carbon Copy List

E-Tags may optionally contain a list of entities (BA, TSP Transmission Service Provider, or PSE) that are provided with a copy of the e-Tag. This list is set as part of an e-Tag creation request and can't be changed by subsequent corrections, adjustments, etc. E-Tag Authors may select up to five entities for inclusion in this list. These entities are provided with a copy of the e-Tag and any subsequent changes in the same manner as which entities in the Market Financial Path are provided with copies of the e-Tag. These entities will not be given approval rights and must not appear in any other role in the e-Tag. For entities of type PSE, all messages will be sent to the registered agent URL. For entities of type BA and TSP Transmission Service Provider, all messages will be sent to the registered approval URL.

## 1.5 Training Requirements

### 1.5.1 User Guides

Anyone developing e-Tag software must provide a ~~User Guide~~user guide, which shall describe, at a minimum, the following information:

- The target user (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

### 1.5.2 User Education

Anyone developing e-Tag software must develop education programs for the use of their software. Education programs must cover the following topics:

- Who the target user is (Author, Approver, or Reliability Coordinator)
- e-Tag principles (to be based on the NERC/NAESB Standards and this specification)
- Software implementation of those principles (to be based on the developer's user interface)
- How those implementations are to be utilized
- How problems and errors can be resolved

Education programs may be developed for self-study, online education, or other means. The developer may offer education ~~Workshops~~workshops; however, the cost of such workshops may be borne by the software customer.

## 1.6 Functional Concepts

### 1.6.1 Initiating a Request

Requests are initiated in order to create or modify e-Tags.

#### 1.6.1.1 Submitting a New e-Tag Request

Submitting a New e-Tag Request is the process in which an e-Tag Author presents a completed RFI/e-Tag to the e-Tag ~~system~~ Authority Service for processing. The e-Tag Author uses its Agent Service to write the e-Tag and then communicate that e-Tag as a request to the Authority Service. The Authority Service then processes the transaction and manages the state of the ~~new~~ New e-Tag Request. ~~Upon~~ Using the time of receipt and the Ramp Start Time, the ~~Authority~~ Authority Service sets the ActOnByTime and the TimeClassification (OnTime, Late, or ATF) based on the ~~time of receipt, the ramp start time of the RFI, and the~~ NERC/NAESB Interchange Standard timing tables. A New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1.

#### 1.6.1.2 Submitting a Correction Request

The e-Tag Author makes e-Tag Corrections when a portion of the e-Tag data must be changed. A correction to an e-Tag can only occur prior to that e-Tag attaining a Composite State of CONFIRMED or IMPLEMENTED. During the New e-Tag Request approval process, in which parties evaluate the transaction for ability to implement, the e-Tag Author may notice or be informed of a needed change in the e-Tag. That change may be written and submitted using the Agent Service.

The correction resets the Request State for entities affected by the correction, distributes the correction, and requires entities affected to re-evaluate the Request using the corrected data. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables. Unaffected entities need not re-approve the e-Tag. Affected entities are defined in section 1.6.2.2.

Transmission Service Providers (~~TSPs~~) may also submit a correction. In this case, the ~~TSP~~ Transmission Service Provider is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated ~~TSP~~ Transmission Service Provider (TPCode). The ~~TSP~~ Transmission Service Provider may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) and the profile may not be extended. ~~TSP~~ Transmission Service Provider created Correction Requests are unilateral and require no approval by any other entity. Upon receipt of a corrections submittal from a ~~TSP~~ Transmission Service Provider, the Authority Service does not reset the ActOnByTime or TimeClassification but will redistribute the correction.

NERC/NAESB Standards provide additional details on the manner in which corrections should be made.

### 1.6.1.3 **Submitting a Profile Change Request**

Changes to a Profile ~~Changes~~ can be requested by several different parties and for three primary reasons:

- To implement market-based modifications to the Transmission Allocation profile.
- To implement market-based desires to modify or extend energy flow
- To implement reliability-based desires to modify energy flow (i.e., curtailments and reloads)

When any of the above possible Profile Changes ~~reasons~~ are needed, the party wishing to implement ~~the~~ a change to a Profile ~~Change~~ will use their appropriate e-Tag service to write and send ~~the~~ a change Request to the Authority Service. The Authority Service then processes the transaction Request and manages the state of the Request. When a profile change is requested for reliability purposes (i.e. curtailment or reload), the Request author must submit a modified profile at the POR or POD of any single physical segment; the Authority Service will then calculate the approximate losses for all other profiles, if applicable.

When an e-Tag Author requests a profile change, they must provide all appropriate profiles necessary to reflect appropriate losses.

## 1.6.2 Request Distribution

### 1.6.2.1 **Distributing a New e-Tag Request**

When an agent submits a ~~new~~ New e-Tag ~~request~~ Request to an Authority Service, the Authority Service distributes copies of that e-Tag to the transaction's participants. Transaction participants include all entities specified in the physical and market path, entities selected in the ~~carbon-copy~~ Carbon Copy list, and any other entities as specified in the NERC/NAESB Interchange Standards. The rights associated with each participant are defined in NERC/NAESB Standards. Entities in the ~~carbon-copy~~ Carbon Copy list must not be given approval rights.

The Authority Service provides a copy of the new e-Tag to each participant, along with a description of their role in the transaction. Each receiving Approval then processes the Request and solicits approval of the Request from its using participant.

### 1.6.2.2 **Distributing a Correction Request**

Corrections are distributed to all entities that received the original e-Tag. Entities specifically impacted by the correction are asked to re-evaluate the e-Tag based on the corrected information. Impacts of corrections are defined in the following table.

Correction Type	Impacted Entity
<i>Any allowable correction to a Physical Generation Segment</i>	<i>Source BA, Generation Providing Entity</i>

<i>Any allowable correction to a Physical Transmission Segment or Transmission Allocation</i>	<i>Transmission Service Provider, Scheduling Entities (Intermediate Bas), Transmission Customer</i>
<i>Any allowable correction to a Physical Load Segment</i>	<i>Sink BA, Load Serving Entity</i>
<i>Any allowable correction to a Market Segment</i>	<i>Purchasing-Selling Entity</i>
<i>Any allowable correction to any product code (energy or transmission) made by the e-Tag Author</i>	<i>In addition to the above, the last Physical Transmission Segment's <u>TSP</u> <u>Transmission Service Provider</u>, LSE, Sink BA</i>
<i><u>TSP</u> <u>Transmission Service Provider</u> correction</i>	<i>No re-evaluation required, no approval required</i>

Corrections are not permitted to add or remove participants from an e-Tag.

Approval Rights over the transaction remain as established in NERC/NAESB Standards. Entities impacted by corrections that are required to approve the transaction must be alerted to the correction. Upon receipt of a corrections submittal, the Authority Service resets the ActOnByTime and the TimeClassification based on the NERC/NAESB Interchange Standard Timing Tables.

NERC/NAESB Standards contain additional information regarding the processing of corrections.

### **1.6.2.3 Distributing a Profile Change Request**

Profile Change Requests are distributed to all entities that received the original e-Tag. Depending on the type of change requested, the parties required to approve the Request may vary. NERC/NAESB Standards describe the entities required to evaluate the modification and the criteria they should use in their evaluation.

## **1.6.3 E-Tag Request Actions**

### **1.6.3.1 Approving and Denying Requests**

Approval entities will use a variety of methods, consistent with NERC/NAESB Standards, to determine whether an e-Tag Request should be approved or denied. Approval entities must actively approve or deny all requests within a specified Request evaluation period.

NERC/NAESB Standards provide details on the timing requirements under which requests should be made and evaluated.

When an approval entity decides to approve or deny a Request, the entity utilizes its Approval action to change the Approval State to "APPROVED" or "DENIED".

An approval entity has the option to change its Approval State at will, until the Request State has reached a final state.

If the entity wishes to indicate that it is reviewing a Request, but will not have an answer for some time, the entity can elect to change its Approval State to “STUDY”. The action of placing an e-Tag in a “STUDY” state does not extend the approval window. The Approval Entity must still act in a timely manner to set the Approval State to “APPROVED” or “DENIED” before the Request evaluation deadline has passed.

The Authority [Service](#) collects these approval States and uses the indicated dispositions to determine transaction request implementation and rejection. NERC/NAESB Standards describe the manner in which an Authority [Service](#) determines the resolution of a particular pending Request. Once an e-Tag has reached a final state, all parties are informed of the resolution

### **1.6.3.2      *Withdrawing a Request***

For both New e-Tag Requests and Profile Change Requests, the Request initiator may withdraw the Request at any time up until the Request has reached a final state by submitting a WithdrawRequest message. If a Request has already been APPROVED, then that Request cannot be WITHDRAWN. In order to withdraw a Request, the initiator uses its Agent [or Approval Services](#) to send a request to the Authority [Service](#) to withdraw the Request. Upon timely receipt of the WITHDRAW request, the Authority [Service](#) will consider the Request WITHDRAWN and process that event accordingly, distributing notification of the Request State change to all parties.

The only party that may withdraw a Request is the original initiator of a Request or holder of the initiator’s Security Key. No Request may be withdrawn without a valid Security Key.

### **1.6.3.3      *Canceling a Request***

Should an e-Tag’s author wish to back out of a CONFIRMED e-Tag, that entity must submit a RequestTerminateTag message to the Authority [Service](#). NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the cancellation request is approved, the Composite State of the e-Tag is set to CANCELLED and processed accordingly with both the energy and transmission allocation profiles set to zero.

### **1.6.3.4      *Terminating an e-Tag***

Should an e-Tag’s author wish to back out of an IMPLEMENTED e-Tag, that entity must submit a RequestTerminateTag message that includes a valid termination time. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If the termination request is approved, the Composite State of the e-Tag is set to TERMINATED at the termination time and processed accordingly. The energy and transmission allocation profiles will be set to zero effective at the specified start time.

Should an entity wish to correct an invalid ATF e-Tag, that entity must submit a RequestTerminateTag. NERC/NAESB Standards describe the approval rights and responsibilities of the various entities involved in the approval process. If approved, the Composite State of the e-Tag is set to TERMINATED immediately and processed accordingly with both the energy and transmission allocation profiles being set to zero.

## 1.6.4 Information Distribution

### 1.6.4.1 *Distribution of Request Approval State*

When a significant status change occurs (as defined in section 3.6.4.1), the Authority [Service](#) responsible for the e-Tag will notify all parties of that change. By doing so all parties are advised of the current disposition of the e-Tag. In the case of entities electing to deny a New e-Tag Request, the e-Tag Author may attempt to correct the e-Tag in order to satisfy the needs of the denying party.

### 1.6.4.2 *Distribution of Request Resolution*

When the final disposition of a Request has been determined (e.g., APPROVED, DENIED, WITHDRAWN, etc.), the Authority [Service](#) responsible for the e-Tag will notify all parties electronically of the request's resolution. By doing so, all parties are advised that they should either implement or discard the request.

### 1.6.4.3 *Distribution of Potential TLR Profile Change*

~~Warning notifications of~~ [The Reliability Authority Service may issue from time to time a warning notification called](#) Potential TLR Profile Change. [These warnings](#) are distributed electronically to each Purchasing-Selling Entity listed on the e-Tag. These notices are preliminary, and may not reflect final curtailments.

~~Warnings of~~ Potential TLR Profile Change [warnings](#) are issued at the time a Reliability Coordinator requests a set of curtailments, but prior to the final confirmation and issuing of those curtailments by the [RASRA Service](#). These warnings can be used by market participants to prepare for curtailments. The warnings may also be used by market participants to proactively modify their transactions in ways that address the reliability needs of the system without compromising the financial positions of the marketplace.

## 1.6.5 Query Functions

Queries may not be abused though excessive querying. General rules for this functionality are as follows:

- No service may query for the same data more than once (1) per minute
- Querying may NOT be considered a replacement for the requirement to have a dedicated listener for inbound information distributions. Services that observe behavior counter to these requirements may ignore such requests if the processing

of those requests represents a threat to the integrity of the system. Prior to ignoring the requests, contact must be made with the offending entity and resolution be attempted. If the attempts to resolve the issue fail, the recipient of the requests may block those requests, provided.

- The processing of those requests represents a real, *documentable* threat to the integrity of the system,
- The threat is fully documented (i.e., processor logs, customer complaints, etc...)
- That recipient has met the above minimum requirement, and
- The attempt to address the problem has been documented as well (i.e., E-Mails, Telephone recordings, etc...).

Some queries are processed through two-part messages, or asynchronous messages. In these types of messages, a query is made, and the recipient acknowledges receipt of the query, but does not respond immediately. The connection between the systems is broken, and the recipient processes the message. Upon completion of the processing, the recipient issues a callback message to the original query author and provides the results of the processing. In this manner, the recipient of the query may manage the processing of such queries more efficiently without threat to the integrity of the system (due to long complex queries that may take significant time and resources to process).

### 1.6.5.1 Querying for e-Tag Summaries

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query ~~e-Tag Authorities~~ Authority Services for a list of e-Tag ~~Summaries~~ summaries for a specified period of time for e-Tags in which they participate. Query parameters allow the ability to ~~Retrieve e-Tag Summaries~~ retrieve e-Tag summaries that:

- were created/last modified during a specified period of time, OR
- have a profile with the first start/last stop intersecting the specified period of time.

E-Tag data may be retrieved for past, current, or future time ranges. This method is intended to be used for emergency operational e-Tag recovery, and is not designed to be used for continuous real-time polling. The duration of the specified time period must not be greater than ~~24~~ 25 hours. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Querying for e-Tag ~~Summaries~~ summaries is an Asynchronous message.

### 1.6.5.2 Querying for an e-Tag

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query for the current data set that describes an e-Tag from the Authority Service. This includes all Request data associated with an e-Tag, including a ~~new tag request~~ New e-Tag Request. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ Security Keys.

### 1.6.5.3 Querying for e-Tags

Any registered entity (PSEs, BAs, ~~TSPs~~ [Transmission Service Providers](#), Reliability Coordinators, etc.) may query for a set of data that describes several e-Tags from the Authority [Service](#). This includes all Request data associated with an e-Tag, including a ~~new tag request~~ [New e-Tag Request](#). Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ [Security Keys](#) (or, for Asynchronous message, must have a listener registered for the entity they represent). Queries for multiple e-Tags are processed through Asynchronous messages.

### 1.6.5.4 Querying for an e-Tag's History

Any registered entity (PSEs, BAs, ~~TSPs~~ [Transmission Service Providers](#), Reliability Coordinators, etc.) may query the Authority [Service](#) for a list of all of the methods that have been applied to a single e-Tag. This query allows a participant to re-construct the complete set of actions that were taken against an e-Tag. Entities can only retrieve e-Tag information through a listener registered for the entity they represent. Queries for multiple e-Tags are processed through Asynchronous messages.

### 1.6.5.5 Querying for Request IDs

Any registered entity (PSEs, BAs, ~~TSPs~~ [Transmission Service Providers](#), Reliability Coordinators, etc.) may query an Authority [Service](#) for a list of Request IDs, in order to verify synchronization with the ~~Authority's~~ [Authority Service's](#) log of requests. Should an entity discover that they are not synchronized with the Authority [Service](#) then, this listing of Request IDs may be used to query an Authority [Service](#) node for the corresponding Request messages. The default behavior of the Authority [Service](#) node is to return all Requests grouped by Request State (e.g., PENDING, APPROVED, etc.) and ordered by original send time. An entity may ask that the listing be filtered based on one or more Request States. Once the Request ID listing has been retrieved, an entity may query the Authority [Service](#) node and retrieve sets of Request messages.

A Request ID listing may be used in two ways. The first is to notify an entity of requests they need to retrieve after communication failure. The second is for an entity to determine for itself which requests it needs after missing requests are detected. In either case, the Authority [Service](#) node may determine based on network traffic and the absence of messaging faults the number of Requests that may be retrieved at one time.

Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ [Security Keys](#).

### 1.6.5.6 Querying for a Specific Request

Any registered entity (PSEs, BAs, ~~TSPs~~ [Transmission Service Providers](#), Reliability Coordinators, etc.) may query the Authority [Service](#) for a copy of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ [Security Keys](#).

### **1.6.5.7 Querying for a Specific Request's State**

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may query the Authority Service for the States of a specified Request. This query allows a participant to recover from missed requests against an e-Tag due to network or system failure. Entities can only retrieve e-Tag information for which they have presented valid ~~security keys~~ Security Keys.

### **1.6.5.8 Querying for Service Availability**

Any registered entity (PSEs, BAs, ~~TSPs~~ Transmission Service Providers, Reliability Coordinators, etc.) may use the QueryAvailability message to query any e-Tagging service regarding its availability to process messages. For purposes of enforcing the restriction that "no service may query for the same data more than once (1) per minute", QueryAvailability messages sent to the same URL are considered to be querying for the same data, even if the ToEntity code is different in the messages.

## Section 2 - Tag Agent Service Functional Requirements

### 2.1 Introduction

All Purchasing-Selling Entities (PSEs) and any other parties responsible for submitting Arranged Interchange shall communicate the necessary information via the Agent. The Agent Service shall comply with all functional requirements set forth in this document. Users may elect to comply with these Agent Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Agent Service shall provide facilities to:

- Accept and validate input e-Tag data from the user.
- Generate all XML necessary to completely specify the transaction as defined in the e-Tag Data Model based on user input data.
- Assign and maintain the correspondence between each transaction's e-Tag ID and e-Tag Author's Security Key.
- Identify the Authority Service associated with the registered Sink Balancing Authority BA in the transaction and electronically communicate the e-Tag ID, Security Key, and associated e-Tag data to that Authority Service.
- Receive unsolicited information messages regarding e-Tags that they are a party to but for which they have no direct approval rights.
- Query Authorities Authority Services for the current State of each transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to correct any pending transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to withdraw any pending transaction or request submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Provide the means for the user to modify any existing transaction submitted by the user (or transaction to which the user has both e-Tag ID and e-Tag Author's Security Key).
- Receive unsolicited information from the other e-Tag services regarding e-Tag updates, curtailment warnings, etc.

Information systems designed to provide more than one e-Tagging service (e.g., Agent and Authorities Authority Services) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

## 2.2 Registry Usage

The Agent [Service](#) shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ [A listing](#) of all such entities shall be maintained and available for downloading from the Electric Industry Registry web site. The Agent [Service](#) shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ [EIR](#) on demand as well as on a prescheduled interval. The ~~Electric Industry Registry~~ [EIR](#) shall be in a format defined in a document posted on the ~~Electric Industry Registry vendor's~~ [EIR's](#) web site.

The Agent [Service](#) must support the receipt of unsolicited messages sent by ~~Authorities~~ [Authority Services](#). To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ [EIR](#) and be capable of receiving e-Tag messages.

## 2.3 Tag Data Entry and Viewing

The Agent [Service](#) shall provide a mechanism for the user to input, edit, and view e-Tags, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document, with the exception that the user shall have the facilities to supply all transaction related information necessary to create complete, valid e-Tags, as well as the interfaces to view those e-Tags.

### 2.3.1 Tag ID Creation

Each e-Tag submitted for approval to any Authority [Service](#) by the Agent [Service](#) shall be identified by an e-Tag ID. This e-Tag ID must not be identical to any used previously to represent transactions with effective stop dates less than one year in the past. *See Section 1.4.2.1 "Tag IDs"*.

### 2.3.2 Security Key Creation

A unique Security Key shall be associated with the initial transmission of an e-Tag from the Agent [Service](#) to the appropriate Authority [Service](#). The Agent [Service](#) shall be responsible for generating this Security Key consisting of a unique 12 character token. All subsequent messages exchanged between the Agent and Authority [Services](#) in regard to this e-Tag shall refer to both the e-Tag ID and Security Key assigned by the user's Agent [Service](#). *See Section 1.4.2.2 "Security Keys"*.

## 2.4 Date and Time Handling

The Agent [Service](#) shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchange with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. ~~The Agent~~ [The Agent Service](#) user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Agent [Service](#) is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time. ~~E-Tag~~ [All](#) start and stop times [in any e-Tag request](#) must be on a minute boundary (*i.e., whole minutes*).

## 2.5 Data Validation

The Agent Service shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

## 2.6 Function Implementation

The Agent is responsible for being able to call the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributePotentialTLRProfileChange
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

### 2.6.1 Initiating a Request

The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry EIR) the Authority Service URL associated with the ~~load control area~~ Sink Balancing Authority on the e-Tag. Send

the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.

- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### 2.6.1.1 **Submitting a New e-Tag Request**

Write Request – The e-Tag Author must write a complete representation of the transaction ~~being e-Tagged~~, as defined in NERC/NAESB Standards and ~~the~~ supported in Section 6, Data Model Overview. The Author must also provide any additional parameters necessary to successfully call the RequestNewTag method. The Agent Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). A ~~new~~ New e-Tag Request must specify a proper Base Profile, as described in section 6.1.4.2.1. Specifically, Agents Agent Services must submit all appropriate profiles, but are not allowed to submit Current Level profiles. All Correction IDs must be set to zero in the ~~new~~ New e-Tag Request.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag being sent must not contain a Profile representing a transaction starting more than 168 hours in the past.
- ATF e-Tags must be no longer than one hour in duration.
- ~~Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.~~
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the Scheduling Entity field is left blank, the Agent Service must ensure that a BA ~~tag~~-code that is identical to the ~~TSP-tag~~ Transmission Service Provider code exists prior to submission to the Authority Service. If no BA ~~tag~~-code identical to the ~~TSP-tag~~ Transmission Service Provider code is found, the Request is invalid.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the new e-Tag a reference number, through which the e-Tag Author may query ~~for State~~. All ~~new~~ New e-Tag ~~requests~~ Requests will receive a request ID of zero (0).

### 2.6.1.2 Submitting a Correction Request

Write Request – The e-Tag Author is responsible for creating the e-Tag correction(s) if needed. The e-Tag Author must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Agent [Service](#) may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to ~~an OASIS contract reference~~ number ([OASIS assignment reference number](#)) must not only contain the ~~OASIS~~[reference](#) number, but also the Transmission Allocation ID, a reference to the Parent Segment, the Product, and the associated ~~Transmission Customer~~[transmission customer or TPSE](#).

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached a final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority [Service](#) will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Agent [Service](#) must record these numbers for later reference and integrity verification.

### 2.6.1.3 Submitting a Profile Change Request

Write Request – The e-Tag Author must write a complete representation of the Profile Change to the e-Tag. The Author must also provide any additional parameters necessary to successfully call the RequestProfileChange method. The Agent [Service](#) may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). e-Tag Authors are required to submit all necessary profiles to support the desired change(s); ~~Authorities~~[Authority Services](#) will not auto-generate upstream/downstream values as done during reliability limit setting. In the case of DYNAMIC type e-Tags, the Agent Service may submit after the fact changes to the market level profile and corresponding loss profile to reflect actual metered values and, if necessary, the Authority Service will clear any previously existing Reliability Level profile limits. Agent Services are not allowed to make changes to the Reliability Level profile or to the Transmission Allocation profile when submitting any after the fact adjustment (including DYNAMIC type e-Tags after the fact adjustments). ~~Agents~~[Agent Services](#) are not allowed to make changes to the Reliability limits except in the case of DYNAMIC type e-Tags where changes made by the Agent Service to the market level profile after the fact (to reflect actual metered values) will clear any previously existing reliability limits. Agent Services are not allowed to make changes to the Transmission Allocation profile when submitting

~~any ATF adjustment (including DYNAMIC type e-Tag ATF adjustments).~~ Furthermore, ~~Agents~~ Agent Services are not allowed to submit Current Level profiles, because these profiles are calculated.

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes can only occur once an e-Tag has transitioned to the Composite State of CONFIRMED OR IMPLEMENTED.
- Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- Extensions must be received NO LATER than the last time specified in any profile in the e-Tag. ~~E~~e-Tags may NOT be extended once the e-Tag's profile (including any previous extensions) has been completed. ATF e-Tags may not be extended.
- Profile change requests may not add or remove any entity.

Should the Request not be valid, the e-Tag Author must be informed of the error(s) by the Agent Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign the Profile Change a request number through which the e-Tag Author may query for Request State. That number will always be greater than zero (0).

### Additional Function Implementation Details

It is possible for an e-Tag Author to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should an e-Tag Author need to modify a transmission allocation then the e-Tag Author must specify the change in the same manner in which profile change or extension would be performed. For example, if a request was made to extend an e-Tag for an additional hour (while intending to utilize the same transmission reservation as used in the previous hour), then an allocation exception would be inserted that specified the additional hour.

Modifications to DYNAMIC type e-Tags more than one hour in the past are used to set the actual interchange quantity. The current level needs to be set to this actual

interchange quantity regardless of any other profile values. This is achieved by clearing any existing reliability limit and setting the Market Level profile.

## 2.6.2 Request Distribution

The Agent [Service](#) only receives three types of Request Distribution – New e-Tag Request Distributions, Correction Request Distributions, and Profile Change Request Distributions.

Upon receiving a distribution message, the agent software should decode, parse, and validate the XML message. If the message doesn't pass syntactic and semantic validation, then the ~~agent~~ [Agent Service](#) must return a fault or error response to the sender. If the message does pass validation, then the agent must return a success response to the sender. Either way, the Agent [Service](#) software is required to provide a valid XML response (success or failure) to the sender of any distribution message.

If the message passes validation and a Secondary Service URL is registered for the Agent Service PSE, the valid message received by the Agent Service must be sent to its Secondary Service URL.

### 2.6.2.1 Processing a New e-Tag Request Distribution

New e-Tag Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method sections must not be violated
- An e-Tag with the ID presented must not already exist on the Agent [Service](#)

### 2.6.2.2 Processing a Correction Request Distribution

Correction Request Distribution messages must pass the following rules in order to be considered valid:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that have reached their final state (e.g., IMPLEMENTED, etc.)
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Agent [Service](#) must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the Agent [Service](#) Operator that the correction has occurred, highlighting the correction for their inspection

- Immediately consider re-setting any previous e-Tag assessment action (APPROVED, DENIED, STUDY, etc.) of an approval entity that is impacted by the correction

### 2.6.2.3 *Processing a Profile Change Request Distribution*

New Profile Change Request Distribution messages must pass the following rules in order to be considered valid:

- The e-Tag ID Referenced in the message must be one held by the Agent [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.6.3 Request Actions

### 2.6.3.1 *Approving and Denying Requests*

The Agent [Service](#) has no requirements with regard to Request Approval and Denial.

### 2.6.3.2 *Withdrawing a Request*

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority [Service](#) at the time the request was made.
  - –The original Security Key for the transaction that was used in the e-Tag Creation message.
  - ~~A reason that explains why the Withdrawal was made.~~
- Withdraw messages must not be sent for requests that have already reached a final state (IMPLEMENTED, DEAD, etc.).
- Withdraw messages may be sent for ATF Requests that have a Request State of PENDING.
- Look up (in the Electric Industry Registry) the Authority [Service](#) URL associated with the ~~load control area~~ [Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).
- The Request State is set to WITHDRAWN.
- WITHDRAWN is a final ~~state~~ [Composite State](#).

### 2.6.3.3 **Canceling an e-Tag**

The following procedure should be used to cancel an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The message must include the original Security Key for the transaction that was used in the e-Tag Creation message. Specify the termination time as the ~~block-start-time~~ Tag Start Time of the e-Tag.
- RequestTerminateTag messages must only be sent for e-Tags with a Composite State of CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag message must contain a termination start time that is equal to the ~~block-start-time~~ Tag Start Time (if it is later it could only transition to TERMINATED).
- Only CONFIRMED e-Tags may transition to CANCELLED e-Tags.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load-control-area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Upon cancellation, all pending requests for the cancelled e-Tag are set to a Request State of DENIED.
- CANCELLED is a final Composite State.

### 2.6.3.4 **Terminating an e-Tag**

The following procedure should be used to cancel or terminate an e-Tag:

- Write the RequestTerminateTag message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the Request ID provide by the Authority Service at the time the request was made and the desired termination time. The termination message must also include the original Security Key for the transaction that was used in the e-Tag Creation message.
- RequestTerminateTag messages are only valid for requests that have reached the state of CONFIRMED, IMPLEMENTED, or TERMINATED.
- RequestTerminateTag messages may be used for IMPLEMENTED ATF e-Tags.
- Termination of a TERMINATED e-Tag may only change the termination time to an earlier time than the last approved RequestTerminateTag Request.
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load-control-area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before

attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).

- Once approved, the Composite State of the e-Tag becomes CANCELLED or TERMINATED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.
- Both CANCELLED and TERMINATED are final ~~states~~ [Composite States](#).
- It is acceptable to terminate an e-Tag multiple times, assuming that the termination time of each termination message is earlier than the termination time of the prior termination messages.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with block end time after the termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, are set to a Request State of DENIED.

## 2.6.4 Information Distribution

### 2.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Agent [Service](#) receives a Request Approval State Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent [Service](#)
- The Security Key presented must be identical to the original Security Key provided at the time the Agent [Service](#) transferred the New e-Tag Request to the Authority [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 2.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Agent [Service](#) receives a Request Resolution Distribution message:

- The e-Tag ID Referenced in the message must be one held by the Agent [Service](#)
- The Security Key presented must be identical to the original Security Key provided at the time the Agent [Service](#) transferred the New e-Tag Request to the Authority [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

When a Request is resolved to a state of APPROVED, then it should be considered complete and the Request data should be applied to the e-Tag. When a Request is resolved to WITHDRAWN, DENIED, or EXPIRED the data in the Request should be disregarded.

### 2.6.4.3 Processing a Potential TLR Profile Change Distribution

The following validation criteria must be checked when an Agent [Service](#) receives a Potential TLR Profile Change Distribution message:

- The e-Tag IDs Referenced in the message must be held by the Agent [Service](#)
- The rules described in the Data Model and Method Descriptions sections must not be violated

Agents may elect to verify the validity of the Potential TLR Profile Change Distribution. To do this, the Agent [Service](#) must send a Callback message to the [RASRA Service](#) that issued the Potential TLR Profile Change Distribution. The Callback must contain the same ~~security key~~ [Security Key](#) presented to the Agent [Service](#) as part of the original TLR Profile Change Distribution message. If the Agent [Service](#) is unable to connect to the [RASRA Service](#) or if the [RASRA Service](#) replies with a Fault, the Agent [Service](#) should attempt to retry the message, as described in section 7.1.1.1.

## 2.6.5 Query Functions

### 2.6.5.1 Synchronous Queries

Synchronous Queries include the following:

- Query e-Tag
- Query RequestIDs
- Query Request
- Query State
- Query Availability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ [EIR](#)) the Authority [Service](#) URL associated with the ~~load control area~~ [Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).

#### 2.6.5.1.1 Query for an e-Tag

Agent [Service](#) must specify a valid e-Tag ID and the associated Security Key they used to submit the original New e-Tag Request.

#### 2.6.5.1.2 Query for Request IDs

Agent [Service](#) must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request. Optionally, the user may elect to filter Request ID's based on the resolution of the requests associated with the e-Tag (i.e., show only IMPLEMENTED Requests).

#### 2.6.5.1.3 Query for a Request

Agent [Service](#) must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID they wish to retrieve.

#### 2.6.5.1.4 Query for a Request's State

Agent [Service](#) must specify a valid e-Tag ID and the associated Security Key when submitting the original New e-Tag Request, as well as the Request ID for the desired State information.

#### 2.6.5.1.5 Querying for System Availability

Agent [Service](#) must specify a particular system for which to query availability - by both entity desk and ~~e-Tag~~ service (Agent, Approval, Authority, or [RASRA Service](#)).

Agents should respond back to ~~Queries~~[queries](#) for ~~System Availability~~[system availability](#) as follows:

- If the Agent [Service](#) is operating correctly, the Return Value should be SUCCESS.
- If the Agent [Service](#) is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Agent [Service](#) should indicate that error.

### 2.6.5.2 Asynchronous Queries

Asynchronous ~~Queries~~[queries](#) include the following:

- Query Summaries
- Query e-Tags
- Query History

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority [Service](#) URL associated with the ~~load control area~~[Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).
- Wait for a response message from the Authority [Service](#). The response message will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the ~~Agent's~~[Agent Service's](#)

registered ~~service~~URL, and will include the same ~~security key~~Security Key used by the Agent ~~Service~~ to submit the query. The Agent ~~Service~~ should perform syntactic and semantic validation on the query response message from the Authority ~~Service~~, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 2.6.5.2.1 Query Summaries

Agent ~~Service~~ must specify either an Active Range or a Last Modified Range for which the e-Tag summaries should be returned. The Active Range is used to specify a range of time during which an e-Tag must have been “active” (i.e., start or end date/time of the e-Tag falls within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a Request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When an ~~approval~~Approval or ~~agent service~~Agent Service requests recovery over an outage range, the service must create a list of unique ~~URL's~~URLs for Authority ~~services~~Services and send the Query Summary messages to each ~~authority service~~Authority Service in order to retrieve all e-Tags for which that e-Tag ~~approval~~Approval or ~~agent service~~Agent Service is a party. For ~~Authorities~~Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The ~~Tag~~Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the ~~Authority's~~Authority Service's companies is listed as the intended message recipient.

Agent ~~Service~~ must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Agent ~~Service~~ creates a Query Summaries message:

- The rules described in the Data Model and Method Descriptions section must not be violated
- The Range specified must not exceed twenty-~~four~~(~~24~~five (25) hours. ~~Authorities~~Authority Services are only required to provide ~~24~~25-hours of information in response to any single query.

The following validation criteria must be checked when an Agent ~~Service~~ receives a Query Summaries Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the original Security Key provided at the time the Agent ~~Service~~ transferred the Summaries Query to the Authority ~~Service~~

#### 2.6.5.2.2 Query e-Tags

The Agent ~~service~~Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. The Agent ~~Service~~ must also specify a Return Rate, which indicates how many e-Tags the Agent ~~Service~~ wishes to receive within each callback. Missing

~~security keys~~ Security Keys can be recovered using the Query Summaries message. The ~~User~~ user must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### 2.6.5.2.3 Query History

Agent Service must specify a valid e-Tag ID and Security Key. The ~~security key~~ Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the ~~security key~~ Security Key provided by the Authority Service through a Distribute message. Missing ~~security keys~~ Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Agent Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 2.7 Availability and Performance

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## Section 3 - e-Tag Authority Service Functional Requirements

### 3.1 Introduction

All entities responsible for performing the Balancing Authority (BA) function shall provide the necessary hardware, software, and/or services to implement the Authority Service. The Authority Service shall comply with all functional requirements set forth in this section. BAs may elect to comply with these Authority Service requirements using internally developed hardware/software, third party developed hardware/software, or third party subscription type services.

The Authority Service shall provide facilities to:

- Accept as input e-Tag data transferred in compliance with this document from any Agent Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly.
- Identify all entities having approval rights over the transaction request, and transfer the request to the associated Approvals Approval Services for evaluation
- Identify all entities entitled to an informational copy of the transaction request, and transfer the request to the associated Agents and Approvals Approval Services.
- Manage each request's approver's Approval States and overall Request State based on communication with the Agent and Approvals Approval Services.
- Verify the identity of each approval entity attempting to approve or deny a Request based on the presented e-Tag ID and Security Key, and update the entity's Approval State and the Request State, as appropriate.
- Provide facilities for overriding Approval States on the behalf of an Approving entity.
- Verify the identity of each requesting entity attempting to make a request based on the presented e-Tag ID and Security Key, and create the Request as appropriate.
- Generate notification messages to Approvals and Agents Agent Services as appropriate.
- Respond to inquiries for transaction information made by Agents or Approvals Approval Services.
- Store all e-Tags, to be available for on-line querying and access, for at least ninety (90) days after the stop date/time in the e-Tag.

Information systems designed to provide more than one e-Tagging service (e.g., Authority and Approvals Approval Service) are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging services provided by (or for) others.

### 3.2 Registry Usage

The Authority Service shall be responsible for maintaining an updated list of all registered entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. The Electric Industry Registry list of all such

entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. The Authority Service shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be in a format defined in a document posted on the ~~Electric Industry Registry~~ EIR vendor's web site.

Each BA shall provide the necessary information to identify in the ~~Electric Industry Registry~~ EIR who serves as their Authority Service when that particular BA is referenced as the Sink BA in an e-Tag.

### **3.3 Tag Data Entry and Viewing**

The Authority Service is primarily an automated manager of data that should require little manual intervention. However, certain events may require user interaction. To this end, ~~The~~ the Authority Service shall provide a mechanism for a user to view e-Tag requests and **directly modify/override entity Approval States**, as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all information (as described in this document) contained in a valid e-Tag.

#### **3.3.1 Approval State Override**

As required above, Approval States may be overridden by the Authority ~~operator~~ Service Operator. Such overrides must occur within the normal bounds of the state management logic:

- Approval States cannot be overridden for requests that have already reached a final state (i.e., IMPLEMENT, CANCELLED, etc.)
- Overrides must be treated exactly the same as if the approver had set the Approval State (i.e., if a state setting would normally move the Request to a state of IMPLEMENT, then an override to the same state must have the same result).

The ability to override Approval States must only be utilized in the event that the entity whose state is being overridden has requested the Authority ~~operator~~ Service Operator to do so due to communication or system failure.

#### **3.3.2 Security Keys**

The Authority Service shall be responsible for managing Security Keys associated with e-Tag requests. Security Keys for ~~Agents~~ Agent Services are chosen by the Agent Service itself; all other Security Keys (with the exception of the IDC Security Key described below) are assigned and managed by the Authority Service.

Each Authority Service shall be assigned a unique IDC Security Key to be used when communicating with the IDC. All communications with the IDC must use this IDC Security Key in order to be considered valid. The IDC will reject any messages without a valid IDC Security Key. The IDC e-Tag Key must be considered confidential.

### 3.4 Date and Time Handling

The Authority Service shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59. E-Tag start and stop times must be on a minute boundary. The Authority Service user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Authority Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

The Authority Service must calculate the latest approval time in order to determine when to end the approval period and set the final Request State of an e-Tag. The absolute date/time by which an e-Tag may be approved is calculated based on a combination of the NERC/NAESB timing guidelinestables and the application of the start ramp duration defined in the first profile block in the e-Tag and e-Tag ~~start time~~ Start Time. If the first energy profile block in the e-Tag does not contain a ramp duration or if the first energy profile block does not start at the e-Tag ~~start time~~ Start Time, then default ramp durations should be used. Default ramp durations are defined in NAESB ~~Standard R05001~~ WEQ-004-17. The default ramp durations must be used in conjunction with the NERC/NAESB timing guidelines to determine the absolute time limit for approval in the absence of a ramp duration supplied by the e-Tag Author.

The ramp type for all interchanges between balancing authorities is a straddle ramp. Straddle ramps divide the start ramp duration equally across the profile ~~block start time~~ Block Start Time and divide the end ramp duration equally across the profile block end time. When the e-Tag contains multiple profile blocks, the ramp duration in the profile block's ramp start duration is used to calculate ramp start time and instantaneous MW levels. The ramp end duration is ignored in all profile blocks except for the last profile block where it is used to calculate the ramp end time and instantaneous MW levels. The ramp start time can be determined by dividing the ramp duration by two and subtracting it from the profile ~~block start time~~ Block Start Time. The start time derived from the first profile block is used to determine the point at which the e-Tag transitions from CONFIRMED to IMPLEMENTED. The ramp continues from the ramp start time across the profile ~~block start time~~ Block Start Time to the ramp duration minutes divided by 2 after the profile ~~block start time~~ Block Start Time.

The default ramp duration for reliability adjustments is ten minutes ~~(for all interconnections)~~. Ramp rates may be optionally supplied by the entity requesting the profile change. When a reliability adjustment is made, it may result in the creation of additional profile blocks. The ramp durations of the profile blocks will need to be adjusted in this case with the ramp start duration of the adjusted block being set to ten minutes or the supplied start ramp duration and the rest of the ramp start durations (and end duration in the final block if applicable) remaining with their associated profile blocks.

### **3.5 Data Validation**

The Authority [Service](#) shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### **3.6 Function Implementation**

The Authority [Service](#) is responsible for being able to call the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeStatus
- DistributeResolution
- DistributeTerminateTag
- CallbackSummaries
- CallbackTags
- CallbackHistory

And process the following methods:

- RequestNewTag
- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- RequestTerminateTag
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- Query Availability

Semantics, including calling and processing rules are described in detail in the following sections.

The Authority [Service](#) is also responsible for Request State Management, as described in section 1.3.4.2 and 1.3.4.3. Passive State settings due to time elapse are also the responsibility of the Authority [Service](#).

#### **3.6.1 Initiating a Request**

##### **3.6.1.1 Processing a New e-Tag Request Submission**

The ~~security key~~ [Security Key](#) presented with the Request e-Tag message will be used by the Authority [Service](#) for all future messages from/to the e-Tag author for this e-Tag.

Authority Service must compare the e-Tag's start time or calculated ramp start time to the timing tables in the NERC/NAESB Standards-timing guidelines. The e-Tag is considered to be assigned a Time Classification of LATE, ATF, or ~~on~~ On-time as per those guidelines. E-Tag tables. All request start and stop times must be on a minute boundary. E-Tags submitted after the e-Tag stop time Tag Stop Time (as determined by the time of receipt at the Authority Service) must be considered to be ATF and designated as such. The corresponding enumeration must be set by the Authority Service and must be persistent, reset only if e-Tag Author makes a correction.

The following validation criteria must be checked when an Authority Service receives a Request e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the Authority Service
- If a Transmission Segment's POR or POD is listed as a DC Tie facility, then the associated Balancing Authority BA for that DC Tie must be listed as a Scheduling Entity SE for that Transmission Service Provider.
- A New e-Tag Request may not create an e-Tag that starts more than 168 hours in the past.
- An ATF e-Tag must be no longer than one hour in duration.
- All applicable validations required in NERC INT-007-1 must be performed.
- The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.
- The earliest energy profile start time must be less than or equal to the earliest start time of any other profile type and the latest energy profile end time must be greater than or equal to the latest end time of any other profile type.
- All base profiles must be included in the request and their start times and durations must be identical.
- If the Scheduling Entity SE field is missing, the Authority Service must ensure that a BA tag-code that is identical to the TSP-tag Transmission Service Provider code exists. If no BA tag-code identical to the TSP-tag Transmission Service Provider code is found, the Request Request's delivery state is invalid set to Invalid.

Once an e-Tag Creation request passes validation, the Authority Service must store the e-Tag in its local data store and identify it as a Pending Request. In so doing, it must generate the appropriate "Current Level" profile. The initial Current Level profile must be stored by the Authority service Service if "In-Kind" losses are specified so it may later be used for loss accounting, replaced only when market level Market Level profile change requests are approved. For each supplied base profile, the *Current* base profiles will be generated. For all transactions and all profiles, the Current Level is equal to the specified Market Level.

The Current Level profile should not be distributed, but rather derived based on all approved Requests associated with a particular e-Tag, processed in order of receipt by the Authority Service.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

The Authority Service must then build the distribution table for the e-Tag. Details follow in the section below. Once the distribution list has been determined, the Authority Service must distribute the e-Tag to the appropriate parties.

### 3.6.1.1.1 Identifying the Distribution List

~~Tag Authorities~~ The Authority Service must determine the distribution list for an e-Tag. The distribution list is comprised of the following entities as listed on the e-Tag:

- The e-Tag Author
- The Generation Providing Entity (Merchant)
- The Load Serving Entity
- All ~~Intermediate~~ Purchasing Selling Entities (Title Holders) in the Financial Path
- All Transmission Customers
- The Balancing Authority in which the generation is located (Source BA)
- The Balancing Authority in which the load is located (Sink BA)
- All Transmission Service Providers
- All Scheduling Entities for those Transmission Service Providers
- All Reliability Coordinators listed in the Electric Industry Registry as being associated with the Source BA, Sink BA, and intermediate BAs.
- All entities contained in the CC list.

In order to determine a Service URL for the above entities, the following rules must be used:

- For GPEs, LSEs, and Transmission Customers, there will be potentially two entries. The first Service URL will be the entity's registered URL for their Agent ~~service~~ Service. The second Service URL will be the entity's registered URL for their Approval ~~service~~ Service.
- For intermediate PSEs, the Service URL will be the entity's registered URL for their Agent ~~service~~ Service.
- For all other entities, the Service URL will be the entity's registered URL for their Approval Service.
- For the GPE, LSE, and Transmission Customer, approval rights may be held, delegated, or waived. When holding rights, the Service URL is based on the registered approval URL for that entity. When delegating rights, the Service URL is based on the approval URL of the alternate entity specified for the specific source/sink in the e-Tag; this delegation always supersedes that specified as the registered approval URL for the GPE/LSE/TC. If the delegated entity is not already in the distribution list, the entity must be added. When waiving rights, the entity will have explicitly not listed an approval service in their registration or that of the source/sink.
- Entities identified in the CC list must not be given approval rights though the e-Tag may be distributed to the entities registered URL for their Approval Service as described in section one of this document.

~~In addition, the messages, including callbacks, must be sent to the Secondary Service URL registered to any PSE, BA, or Transmission Service Provider in the distribution list. This does not apply to any URL that matches a Service URL. These forwarded messages shall not impact the Delivery State of the associated entity.~~

No duplicate entities may be in the distribution list. A duplicate is defined as entities sharing ~~both~~ the same ~~entity type (BA, TSP, PSE, RC), NERC Acronym~~ Tagging Entity ID, Service Type (i.e., Agent, Approval, or Authority), and Service URL. Any entity that does not have a registered Service URL shall be removed from the distribution list, and any approval rights waived. Each entity will have a record in the list, identifying their Delivery Service URL for the transaction. A record in the list should have the following general format:

TAG ID	REQUEST ID	<u>TAGGING</u> ENTITY <u>CODEID</u>	SERVICE TYPE	SERVICE URL
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### 3.6.1.2 Processing a Correction Request Submission

The following validation criteria must be checked when an Authority Service receives a Request Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security key presented must be identical to the key presented to the Authority Service at the time the e-Tag was originally submitted by the Agent Service.
- Only the e-Tag Author or TSP Transmission Service Provider may issue a correction
- Corrections are only allowed for e-Tags that are in a PENDING state.
- Only certain items may be corrected on an e-Tag. Specifically, the following are NOT allowed:
  - Addition or removal of any entity from the transaction path (both financial and physical)
  - Changes to the Energyenergy profile (changes to the transmission allocations are acceptable)
  - Reassignment of a Transmission Allocation to a new Parentphysical segment
  - Addition or Removal of any Scheduling Entity
- TSP Transmission Service Provider authored corrections may only change the TransProductRef and transmission allocation on a physical segment where they are the associated TSP Transmission Service Provider. The total transmission allocation MWlevel may not be changed (increased or decreased) for any period. Extensions are prohibited.

Once a Correction Request passes validation, the Authority Service must recompute ActOnByTime and TimeClassification using the correction's submission time in place of the e-Tag submission time and following the rules from the NERC/NAESB Standards timing guidelines tables. For TSP Transmission Service Provider authored Correction Requests, since no approval process is required, the Authority Service must assign the

same values active for the e-Tag for the ActOnByTime and TimeClassification. The Authority Service must then assign an incremental unique number to the correction, and each item being corrected must be updated to reflect this number. The first correction must be considered correction ID one (1). The response must contain references to the versions of the corrected segments.

The Authority Service must REPLACE the data in its current store with the new correction data. Any entity impacted by the correction (as defined in Section 1.6.2) must have their Approval State reset to PENDING and be informed of the change through Correction Request Distribution.

### **3.6.1.3 Processing a Profile Change Request Submission**

The following validation criteria must be checked when an Authority Service receives a Request Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- Profile Change Requests are only allowed for e-Tags that have been CONFIRMED or IMPLEMENTED
- Profile Change Requests may only change hours that are at the EARLIEST one (1) hour in the past. Dynamic tags are an exception to this rule (they may be changed up to 168 hours in the past).
- Profile change requests may not be made to extend an e-Tag once the e-Tag's profile has been completed (i.e., current time is equal to or later than the last date/time specified in the e-Tag).
- Reliability Limits may be set and cleared for any duration.
- Only certain entities may change certain profile values.
- Reliability Limits may specify the applicable BaseProfileID. The default location of the limit is at the Source BA (formerly referred to as GCA) (BaseProfileID 1).
- Profile change requests, including DYNAMIC type e-Tag ATF adjustments, made by the e-Tag author will use the source profile for loss calculations and will replace the profile stored on the Authority Service for use in loss calculations once the Request has reached a CONFIRMED or IMPLEMENTED state.
- Reliability Limits and Transmission Allocation may not be changed for DYNAMIC e-Tags more than one hour in the past (but may be cleared).
- All applicable validations required in NERC INT-007-1 must be performed.
- TSP Transmission Service Provider Market Profile changes may only impact the TransProductRef and transmission allocation on a physical segment where they are the associated TSP Transmission Service Provider.

- ~~TSP~~ Transmission Service Provider Market Profile changes may not reduce or increase the total transmission allocation MWlevel for any period. Extension is prohibited.
- ~~TSP~~ Transmission Service Provider Market Profile changes cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.
- Profile change requests may not add or remove any entity.

Upon receipt, the Authority sets the ActOnByTime and TimeClassification based on the time of receipt and the timing table in the NERC/NAESB Interchange Standard timing tables. ~~TSP~~ Standards. Transmission Service Provider Market Profile changes to the Product Code or Transmission Allocation requires no approval process therefore ActOnByTime should be set to the time of receipt and TimeClassification should be set to “On-Time”-time.

If the Request changes the reliability limit, then the Authority Service must calculate the correct MW values to use for all profiles except for the source profile (which is included in the Profile Change message). The source profile will be associated with a physical location (BaseProfileID). If no physical location is included in the Profile Change message then the Authority Service will default the location to the Source BA (formerly referred to as GCA). The value of each profile calculated below must use the location information to calculate the correct profile values for both upstream and downstream profiles. The value of the profile at the physical segment specified in the Profile Change message will be the same as the source profile. The process for calculating upstream and downstream profiles is done in three steps:

Loss Percentage, Carry Forward, and the New Limit calculation. Step

The first step is to calculate the Loss percentage supplied by the creator of the original e-Tag based on the current ~~MARKET LEVEL~~ Market Level. This is done by applying the specified formula, for the day the curtailment is effective.

$$LossPercentage = \frac{TotalDailyMWhPOR - TotalDailyMWhPOD}{TotalDailyMWhPOR}$$

Carry Forward Step

To minimize overpayments or underpayments when calculating the POD Megawatt profile under a curtailment a CarryForward concept is used to ensure that the delivering party is not over-charged with losses for the transaction. The starting value of CarryForward will always be zero. Afterwards, the CarryForward value must be re-calculated each hour or part of an hour for which a new curtailment has been applied to the profile.

$$CarryForward_N = 0$$

New Limit Step

$$NewLimit_N = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage)$$

After the first calculation of the NewLimit, a CarryForward will exist and should be calculated as:

$$CarryForward_{N+1} = RoundUP(SpecifiedLimit * LossPercentage) - (SpecifiedLimit * LossPercentage)$$

Afterwards, curtailment should use the CarryForward value to calculate the new limit as:

$$NewLimit_{N+1} = SpecifiedLimit - RoundUP(SpecifiedLimit * LossPercentage - CarryForward_{N+1})$$

Example:

Daily MWh POR = 100 MW

Daily MWh POD = 97 MW

SpecifiedLimit (Curtailed to) = 50 MW

$$LossPercentage = \left( \frac{100 - 97}{100} \right) = 0.03$$

$$CarryForward_{N_0} = 0$$

$$NewLimit_{N_0} = 50 - RoundUp(50 * 0.03) = 50 - 2 = 48$$

$$CarryForward_{N+1} = RoundUp(50 * 0.03) - (50 * 0.03) = 2 - 1.5 = 0.5$$

Second Curtailment occurs to 40 MW

$NewLimit_{N+1} = 40 - RoundUp(40 * 0.03 - 0.5) = 40 - RoundUp(.7) = 39$  If a Reliability Limit Clearing-clearing is applied, then reliability limits for all periods following the start of the Clearing-clearing through the end of the clearing are set to null and the limits erased.

Once the downstream reliability profiles have been created, the Authority Service must generate the appropriate "Current Level" exception profiles. The exception profiles must only reflect the hours changed, NOT the entire transaction. The current *exception* profile will always be generated based on the following rules:

#### **For PSE-Originating Market Changes:**

*For each supplied Exception Profile*

- The Exception Current Level is set to the lesser of the effective Reliability Limit for the profile and the Exception Market Level. Effective Reliability Limit is defined as the current Exception

Reliability Limit if one exists; if none exists, then the Reliability Limit is assumed to be infinite.

**For Source BA/~~TSP~~Transmission Service Provider/Sink BA-Originating Reliability Changes:**

*For Generation Profiles:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the specified Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level.

*For each POR, POD, and Load Profile:*

- The Exception Current Level is set to the lesser of the effective Market Level for the profile and the previously calculated Exception Reliability Limit. Effective Market Level is defined as the current Exception Market Level if one exists; if none exists, then the Market Level is assumed to be the originally specified Base Market Level Exception

For any Exception Profile where the Current Level is equal to the Base Current Level, the Exception Profile must be eliminated. This is intended to reduce redundant data exchange.

**Additional Implementation Details**

It is possible for an e-Tag Author or ~~TSP~~Transmission Service Provider to supply changes to the transmission allocation when specifying a profile change. The following rules must be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. In so doing, a new reservation allocation and new Base Profile will be added. The reservation allocation will NOT be added as an exception allocation, as no previous base exits to be modified.
- Should an e-Tag Author need to modify an allocation, the changes must be specified in the same manner in which profile change or extension would be processed. For example, if a request was made to have a transaction for an additional hour, and the requestor desired to use the same reservation that was used for the previous hour, an allocation exception would be inserted that specified the additional hour.
- ~~TSPs~~Transmission Service Providers may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.

- **TSP** Transmission Service Provider transmission allocation adjustments cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority Service receives the Request and the latest possible change ending at the Tag Stop Time.

Following this modification of the allocation the ChangeRequest is distributed to all appropriate parties.

### 3.6.2 Request Distribution

The following procedure should be used when sending Request Distribution messages:

- Encode the new Request in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the intended recipient of the distribution message
- If the submission fails or the response contains fault messages, attempt to resend the message using the process described in section 7.1.1.1.
- Set the delivery status to an appropriate value indicating whether or not the message was successfully delivered to the intended recipient. Appropriate values are DELIVERED (no errors), COMMFAIL (couldn't contact the message recipient) and INVALID (an error was returned by the message recipient)

#### Identifying the Entities with Approval Rights

Some of the entities in the Distribution List will have Approval Rights over the various requests, while others will have only viewing rights. The rules for determining who has Approval Rights to each Request are defined in Section 1.6.2.1 of this document.

The Authority Service will need to maintain a RequestApprovalRights list for each e-Tag. This list will be used in generating the appropriately formatted distribution messages for delivery to the various distribution entities. The list will also be used to store local State information about each entity. Each entity will have a record in the list, defining their Delivery State, Approval State, and State Type. Initial delivery state (before delivery has been attempted) should be set to PENDING. A record in the list should have the following general format:

TAG ID	REQUEST ID	ENTITY CODE	DELIVERY URL	DELIVERY STATE	APPROVAL STATE	STATE TYPE
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Each Request requiring Approvals (New e-Tag Request, Profile Change Request) must have a data set of this type associated with it. Entities with Approval rights will have their Delivery State set to QUEUED, their Approval State set to PENDING, and their State Type set to NA.

Entities without Approval Rights will have their Delivery State set to QUEUED, their Approval State set to NA, and their State Type set to NA.

An entity authoring a Request will be assumed to have implicitly approved that Request and as such, will have their Delivery State set to QUEUED, their Approval State set to APPROVED, and their State Type set to ACTIVE. The entity will, however, retain rights to set their Approval Status (i.e., if they wish to deny their own Request, they may do so).

Entities with Approval Rights on a Request are specifically instructed to take action on the e-Tag through the use of the ApprovalRights flag.

### **3.6.2.1            *Distributing a New e-Tag Request***

Distribution of a New e-Tag Request is handled as described in Section 3.6.2.

### **3.6.2.2            *Distributing a Correction Request***

Distribution of a Correction Request is handled as described in Section 3.6.2.

For entities impacted by the Request, the Authority [Service](#) must set the IMPACT flag to TRUE. For entities not impacted by the correction, the IMPACT flag must be set to FALSE.

~~In certain situations, it is possible for a Transmission Customer or Scheduling Entity to be added or removed. Should such a case occur, the following process must take place:~~

- ~~1. Any Entities being removed must be sent the correction with the impact flag set to TRUE~~
- ~~2. Any Entities being removed must have their entries removed from the Distribution list~~
- ~~3. Any Entities being removed must have their entries removed from the RequestApprovalRights list~~
- ~~4. Any New Entities must have their entries added to the Distribution list~~
- ~~5. Any new customers must have their entries added to the RequestApprovalRights list.~~

~~Following the completion of these steps, the Correction must be distributed normally.~~

### **3.6.2.3            *Distributing a Profile Change Request***

All distributions must include the market levels or reliability limit profiles for that period.

Distribution of a Profile Change Request is handled as described in Section 3.6.2. If a Reliability Limit [Clearing-clearing](#) is being requested, then that limit clearing must be distributed to all entities.

### 3.6.3 Request Actions

#### 3.6.3.1 Processing Request Approvals and Denials

The following validation criteria must be checked when an Authority [Service](#) receives a Request Approval or Denial message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag Id presented must represent an e-Tag currently held by the Authority [Service](#)
- The Request ID presented must represent a Request currently held by the Authority [Service](#)
- The Security Key presented must be identical to the key assigned by the Authority [Service](#) at the time the new e-Tag was originally transferred to the Approval [Service](#).
- The entity attempting to set State must be one of the entities having approval rights over the Request.
- An Author of the State Setting must be specified
- State Settings are only allowed for Requests that are not in a final state.
- State Settings of DENIED or STUDY must be accompanied by reasons that explain why the specific state was chosen
- ~~The entity attempting to set State must have the most recent correction of the data within its scope~~

Once a Request Approval message passes validation, the Authority [Service](#) must store the State in its local data store and use it to identify when the Request's Approval State should be updated. The State Type must be marked as "ACTIVE." If a denial or study, the State information must be distributed to all parties.

In certain cases, the Authority [Service](#) Operator may be obligated to override a State request on the behalf of another entity. Should this situation occur, the new State must be recorded and the State Type set to "OVERRIDE."

#### 3.6.3.2 Processing a Withdraw Request

The following validation criteria must be checked when an Authority [Service](#) receives a Withdraw Request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority [Service](#)
- The Request ID presented must represent a Request currently held by the Authority [Service](#)
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key

presented to the Authority Service at the time the e-Tag was originally transferred by the Agent. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.

- The entity attempting to Withdraw must be the Author of the Request.
- A Withdrawal is only allowed for a Request that is PENDING
- ~~A Withdrawal must be accompanied by a reason that explains why the Withdrawal was made.~~
- Withdraw Requests may be submitted for ATF Requests that have a Request State of PENDING

If the Request State of the Request is PENDING, then the Authority Service must set the Request State of the Request to WITHDRAWN and distribute a DistributeStatus message as required in section 3.6.4.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

WITHDRAWN is a final state.

### 3.6.3.3 Processing a Terminate Request

The following validation criteria must be checked when an Authority Service receives a RequestTerminateTag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag ID presented must represent an e-Tag currently held by the Authority Service
- The Security Key presented must be identical to the key associated with the Profile Change requester. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, the key will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- RequestTerminateTag requests are only allowed for e-Tags that are CONFIRMED, IMPLEMENTED, or TERMINATED.
- The RequestTerminateTag request must contain a termination time that is between the e-Tag ~~block start time~~ Start Time and e-Tag ~~block end time~~ Stop Time, and later than the time of receipt.
- A RequestTerminateTag request is invalid if it requests a start time that is later than or equal to an existing RequestTerminateTag Request for the same e-Tag; however, a request for an earlier termination time is allowable.
- Upon the RequestTerminateTag request becoming APPROVED, all PENDING RequestProfileChange requests with ~~block end time~~ Block Stop Time after the

termination time, and all PENDING RequestTerminateTag requests with termination time after the APPROVED Request's termination time, must be set to a Request State of DENIED.

The Authority Service must distribute a DistributeTerminate message as defined in 3.6.1.1.1. The Request is subject to the same approvals as a new adjustment request. The Authority Service sets the ActOnByTime based on the receipt time of the message and the NERC/NAESB Interchange Standard timing tables. This will also include calculation of ramp start time. The Authority Service also sets the TimeClassification based on the NERC/NAESB Interchange Standard timing tables and the termination time. If the Request State becomes APPROVED, the ~~Authority's~~ Authority Service's action depends on the termination time.

- If the termination time is equal to the ~~block start time of the e-Tag~~ Start Time of the e-Tag, then the Authority Service must distribute a DistributeResolution message that sets the Composite State of the e-Tag to CANCELLED.
- If the termination time is after the ~~block start time of Tag~~ Start Time of the e-Tag, then the Authority Service must set the market level profiles and transmission allocation profiles of the e-Tag to zero starting at the termination time, and distribute a DistributeResolution message that includes the time at which the Authority, Approval, and Agent Services will set the e-Tag's Composite Status to TERMINATED. This is called the TerminationTime.

Upon receipt, the Authority Service sets the ActOnByTime and the TimeClassification based on the time of receipt and the NERC/NAESB Interchange Standard timing tables.

CANCELLED and TERMINATED are final states.

### 3.6.4 Information Distribution

Whenever a significant status event occurs as defined below, or a Request Resolution occurs, the Authority Service must notify all parties on the distribution list of the e-Tag regarding the change. This notification aids in coordination and communication between the various entities involved with the transaction. These notifications follow the same procedure used by the other Request Distribution messages, described in section 3.6.2.

#### 3.6.4.1 *Distribution of Request Approval State*

A significant status event (an event triggering a State Distribution) is defined as one of the following:

- An Approver sets their State to DENIED, STUDY or APPROVED
- The Authority Service sets a Delivery state to INVALID or COMMFAIL

The distribution must contain the State of ALL entities with approval or viewing rights over the Request.

When a distribution is triggered, the Authority [Service](#) must wait five (5) seconds to verify no other changes are made to the States associated with the Request. If such changes are made, the distribution must be updated to include those changes. If the Denial or Study is overridden to APPROVED, the distribution must be aborted.

Distribution of a Request Approval State is handled as described in Section 3.6.4.

### **3.6.4.2 Distribution of Request Resolution**

The events triggering a Request Resolution Distribution are as follows:

- All Approvers have set their State to Approved, or
- The time for approval of the Request expires, or
- A requester withdraws the Request.

Given the above events, the following rules apply to determining the resolution of the Request:

- If a requester has withdrawn the Request, the Request is WITHDRAWN.
- If all approvers have set their State to Approved, the Request is APPROVED and the Composite State is CONFIRMED.
- If time has expired and any Approver's current State is DENIED, the Request is DENIED.
- If time has expired, and no Approver's current State is DENIED, and all Reliability Entity's current State is APPROVED, the Request is APPROVED.
- The individual status of any Market Entity whose current State is PENDING will be set to APPROVED and the Type will be set to PASSIVE when the Request State of the Request is APPROVED.
- If time has expired, and any Reliability Entity's current State is EXPIRED (or PENDING), the Request is EXPIRED.

When the Authority [Service](#) distributes a Request Resolution for a New e-Tag Request where the Composite State of the e-Tag is transitioning to CONFIRMED, the Authority [Service](#) must calculate and distribute the "ImplementTime" so that all Agent and Approval ~~services~~ [Services](#) know when the Authority [Service](#) is planning to make the transition from CONFIRMED to IMPLEMENTED.

Distribution of a Request Resolution is handled as described in Section 3.6.4.

### **3.6.4.3 Potential TLR Profile Change Distributions**

The Authority [Service](#) has no requirements with regard to the [warning message titled](#) Distribution of Potential TLR Profile Changes.

## **3.6.5 Recovery Functions**

### **3.6.5.1 Processing Synchronous Queries**

Synchronous Queries include the following:

- QueryTag

- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to process all synchronous queries:

- Decode the XML message and perform syntactic/semantic validation
- If the query passes validation return the requested data. Otherwise return a fault or error message

#### 3.6.5.1.1 Processing an e-Tag Query

The following validation criteria must be checked when an Authority [Service](#) receives a Query e-Tag message:

- The e-Tag ID Referenced in the message must be one held by the Authority [Service](#)
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority [Service](#) at the time the e-Tag was originally transferred by the Agent [Service](#). For e-Tag Approvers, this will be the Security Key assigned by the Authority [Service](#) at the time the new e-Tag was originally transferred to the Approval [Service](#).
- The rules described in the Data Model and Method Descriptions sections must not be violated.

#### 3.6.5.1.2 Processing a Request Ids Query

The following validation criteria must be checked when an Authority [Service](#) receives a Query Request Ids message:

- The e-Tag ID Referenced in the message must be one held by the Authority [Service](#)
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority [Service](#) at the time the e-Tag was originally transferred by the Agent [Service](#). For e-Tag Approvers, this will be the Security Key assigned by the Authority [Service](#) at the time the new e-Tag was originally transferred to the Approval [Service](#).
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Request IDs Query message passes validation, the ~~authority~~ [Authority Service](#) should return the requested data ordered by Request State and then by Request creation time (oldest to most recent).

#### 3.6.5.1.3 Processing a Request Query

The following validation criteria must be checked when an Authority [Service](#) receives a Query Request message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 3.6.5.1.4 Processing a Request State Query

The following validation criteria must be checked when an Authority Service receives a Query Request State message:

- The e-Tag ID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the e-Tag being queried. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 3.6.5.1.5 Processing Queries for System Availability

~~Authorities~~ Authority Services should respond back to Queries for System Availability as follows:

- If the Authority Service is operating correctly, the Return Value should be SUCCESS.
- If the Authority Service is not operating correctly, the Return Value should be FAIL.
- If a known error Service is occurring, the Authority Service should indicate that error.

#### 3.6.5.2 Processing Asynchronous Queries

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to process all asynchronous queries:

- Decode the XML message and perform syntactic/semantic validation

- If the query passes validation, queue the Request for further processing and return a success response, otherwise return a fail response.
- Periodically read and process all queued queries. For each query, send a new (callback) message to the registered URL of the party that submitted the query. The callback message should contain the data that was requested by the previous Query message.
- If the callback message fails or encounters a fault response, attempt to resend the message using the process described in section 7.1.1.1.

Asynchronous responses must start within five minutes of query receipt.

#### 3.6.5.2.1 Processing e-Tag Summary Queries

The following validation criteria must be checked when an Authority Service receives a Query e-Tag Summary message:

- The Range specified for the query must not exceed twenty-~~four (24)~~ five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than 24-25 hours of information.
- The rules described in the Data Model and Method Descriptions sections must not be violated

Once an e-Tag Summary Query message passes validation, the ~~authority~~ Authority Service should return the requested data ordered from oldest to most recent based on the users search criteria (Date Active or Date Modified). The ~~security key~~ Security Key used for the callback message should be the same ~~security key~~ Security Key that was used when the e-Tag Summary Query message was submitted.

When an approval or agent service requests recovery over an outage range, the service must create a list of unique ~~URL's~~ URLs for Authority ~~services~~ Services and send the Query Summary messages to each ~~authority service~~ Authority Service in order to retrieve all e-Tags for which that e-Tag ~~approval~~ Approval or ~~agent service~~ Agent Service is a party. For ~~Authorities~~ Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The ~~Tag Authority~~ Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the ~~Authority's~~ Authority Service's companies is listed as the intended message recipient.

#### 3.6.5.2.2 Processing an e-Tags Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tags message:

- The e-Tag Ids presented must be held by the Authority Service
- The e-Tag Keys associated with those e-Tag Ids must be valid keys associated with those e-Tags and with the querying entity
- The Return Rate must be greater than zero (0)

- The rules described in the Data Model and Method Descriptions sections must not be violated

Once a Query e-Tags message passes validation, the ~~authority~~ Authority Service should return the requested data ordered by e-Tag creation time from oldest to most recent. Each callback message should contain one or more e-Tags, but not more than the number of e-Tags specified in the Return Rate field of the Query e-Tags message. Each message may contain fewer than the requested number of e-Tags. The ~~security key~~ Security Key used for the callback message should be the same ~~security key~~ Security Key that was used when the e-Tag Summary Query message was submitted.

#### 3.6.5.2.3 Processing an e-Tag History Query

The following validation criteria must be checked when an Authority Service receives a Query e-Tag History message:

- The TagID Referenced in the message must be one held by the Authority Service
- The Security Key presented must be identical to the key associated with the querying party and must be associated with the queried e-Tag. For the e-Tag Author, this will be the Security Key presented to the Authority Service at the time the e-Tag was originally transferred by the Agent Service. For e-Tag Approvers, this will be the Security Key assigned by the Authority Service at the time the new e-Tag was originally transferred to the Approval Service.
- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Authority Service should return all data to the caller, regardless of the message delivery status, except for retry messages (which should never be returned).

Once a Query e-Tags message passes validation, the ~~authority~~ Authority Service should return the requested data ordered by Call Time Stamp (oldest to most recent).

### 3.7 Availability and Performance

~~Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.~~

## **Section 4 – Tag Approval Functional Requirements**

The Authority Service must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, the Authority service must provide, at a minimum, the following:

- Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);
- Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);
- Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc.).

Providers of Authority Services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.

## Section 4 - Approval Service Functional Requirements

### 4.1 Introduction

All entities that may have “approval rights” over any Interchange Transaction shall provide the necessary hardware and software systems to implement the Approval Service. The Approval Service shall comply with all functional requirements set forth in this section. Approval entities may elect to comply with these Approval Service requirements using internally developed hardware/software; third party developed hardware/software, or third party subscription type services.

Approval shall be responsible for providing the following functions:

- Accept input e-Tag data transferred in compliance with this document from any Authority Service.
- Provide immediate syntactical validation of the incoming data stream and respond accordingly (i.e., provide for positive acknowledgement of receipt of the e-Tag).
- Communicate approval, denial, study, and adjustment information to the Authority Service managing the e-Tag in compliance with this document.
- Receive notification messages from the Authority Service.
- Query the appropriate Authority Service for the current State of each Request submitted for approval.

Information systems designed to provide ~~more than one electronic~~ multiple e-Tagging ~~services~~ services (e.g., Authority and ~~Approvals~~) Approval Services, are free to use any internal or proprietary mechanisms to convey e-Tag information between those functional services, but must still comply with all technical standards and protocols related to the exchange of transaction information with e-Tagging related services provided by (or for) others.

### 4.2 Registry Usage

The Approval shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers (~~TSPs~~), ~~Balancing Authorities~~ (BAs), and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ A listing of all such entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. The Approval Service shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be maintained in a format defined by the NERC/NAESB Joint ~~Interchange Electric Scheduling Working Group~~ Subcommittee.

The Approval Service must support the receipt of unsolicited messages sent by ~~Authorities~~ Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ EIR and be capable of receiving e-Tag messages.

### 4.3 Tag Data Entry and Viewing

The Approval [Service](#) is the main interface through which entities with approval rights to an e-Tag alert the e-Tag author and each other of their decisions to approve, deny, or change an e-Tag to reflect a valid representation of a scheduled transaction. To this end, the Approval [Service](#) shall provide a mechanism for a user to view, make changes, or modify the entity state(s), as well as perform all other functional requirements described herein. The exact nature of this user interface is beyond the scope of this document; with the exception that the user shall have the facilities to view all transaction related information (as described in the Data Model) necessary to represent a complete, valid e-Tag.

### 4.4 Date and Time Handling

The Approval [Service](#) shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time (UTC)~~ prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59.

The Approval user interface is free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the Approval [Service](#) is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### 4.5 Data Validation

The Approval [Service](#) shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### 4.6 Function Implementation

The Approval [Service](#) is responsible for being able to call the following methods:

- RequestCorrection
- RequestProfileChange
- SetState
- WithdrawRequest
- QuerySummaries
- QueryTag
- QueryTags
- QueryHistory
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeTerminateTag
- DistributeProfileChange

- DistributeStatus
- DistributeResolution
- CallbackSummaries
- CallbackTags
- CallbackHistory
- QueryAvailability

Semantics, including calling and processing rules are described in detail in the following sections.

#### 4.6.1 Initiating a Request

The Approval [Service](#) may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ [EIR](#)) the Authority [Service](#) URL associated with the ~~load control area~~ [Sink BA](#) on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority [Service](#).

##### 4.6.1.1 *Submitting a Correction Request*

Write Request – Transmission Service Providers (~~TSPs~~) may submit e-Tag correction(s) if needed. The [TSP Transmission Service Provider](#) must also provide any additional parameters necessary to successfully call the RequestCorrection method. The Approval [Service](#) may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...). When submitting a correction, the correction must contain all the necessary data to replace the existing data. For example, a correction to a TransProductRef must not only contain the TransProductRef, but also the Transmission Allocation ID, a reference to the Parent Segment, the OASIS Number, and the associated Transmission Customer.

The [TSP Transmission Service Provider](#) is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated [TSP Transmission Service Provider](#) (TPCode). The [TSP Transmission Service Provider](#) may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation may not be changed (either reduced or increased)

Verify Semantics – the following rules must be met in order to constitute a valid Request:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may only be made to e-Tags that are PENDING
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Should the Request not be valid, the ~~TSP~~Transmission Service Provider must be informed of the error(s) by the Approval Service and provided with an opportunity to rectify the violation.

Store Reference Number – The Authority Service will assign each correction a number that is used to indicate the most recent correction to be applied to a specific segment or allocation (or set of such changes). The Approval Service must record these numbers for later reference and integrity verification.

#### **4.6.1.2 Submitting a Profile Change Request**

When requesting a setting of the reliability limit, the Approver may specify the profile at a specific physical segment. If the Approver does not specify a physical segment the default is the generator. The Authority Service will calculate the remaining profiles for all other upstream and downstream profiles. The Approver must provide any additional parameters necessary to successfully call the RequestProfileChange method. If requesting a clearing of reliability limits, the Approver must specify a start and a stop range for the clearing of the limit. ~~Approvals~~Approval Services are not allowed to submit Current Level profiles, as they are calculated by the Authority Service.

The Approval Service may elect to automate the provision of some of these parameters (i.e., Security Key, e-Tag Code, etc...).

In some cases the Market Operators may specify Market Level Profile changes rather than Reliability Limit Profile Changes. Specifying a Market Level Profile Change is completely acceptable provided the entity is a registered Market Operator and the Profile Change Request would modify a transaction that sources or sinks in the Market Operator's Balancing Area(s). Such use of the Market Level profile must ONLY be used by the Market Operator when market conditions are setting the flow of the transaction; reliability concerns must still be handled through the use of the Reliability limit. Market Operators must provide full sets of profile changes (i.e., not only the profile at the Generator, but all profiles along the scheduling path as well).

In the case of DYNAMIC e-Tags, the ~~sink~~Sink BA or ~~source~~Source BA may specify limit clearing and Market Level Profile changes. This is intended to allow the ~~LCA~~Sink or ~~GCA~~Source BA to set the energy level of the e-Tag to the metered (actual) interchange value. This type of modification is allowed ONLY for historic data up to 168 hours in the past. When any entity changes a market level, they must also supply all of the

profiles in the e-Tag. Changes to the reliability limit, with the exception of limit clearing, must not be allowed for DYNAMIC e-Tags if they are for a period more than one hour in the past.

The [TSP Transmission Service Provider](#) may also submit a Market Level Profile change and is only allowed to modify the TransProductRef and transmission allocation on a physical segment where they are the associated [TSP \(TPCode\) Transmission Service Provider](#). The [TSP Transmission Service Provider](#) may horizontally or vertically stack transmission, just as the e-Tag Author can, however the total transmission allocation MWlevel may not be changed (either reduced or increased) nor the earliest start and end times.

The following validation criteria must be checked when an Approval Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may only be made to e-Tags with Composite States of CONFIRMED or IMPLEMENTED
- Profile Changes are not allowed for ATF e-Tags (they may be terminated)
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags which must not affect points in time more than 168 hours in the past.
- [Profile change requests may not add or remove any entity.](#)

It is possible for a [TSP Transmission Service Provider](#) to supply changes to the transmission allocation when specifying a profile change. The following rules should be noted:

- It is impossible to delete a transmission allocation. If a reservation needs to be eliminated, its profile must be adjusted to zero.
- A new transmission allocation may be added at any time. This addition will result in the creation of a new reservation allocation and new Base Profile. The transmission allocation will NOT be added as an Exception Allocation since a previous Base Profile does not exist. (See section 6.2.5 for more information on Allocation Profiles.). Transmission allocation IDs must not be re-used, regardless of Request State.
- Should the [TSP Transmission Service Provider](#) need to modify a transmission allocation then the [TSP Transmission Service Provider](#) must specify the change in the same manner in which profile change would be performed.
- The [TSP Transmission Service Provider](#) may not submit a transmission allocation change that modifies the pre-existing transmission allocation MWlevel for any period. Extension is prohibited.
- The adjustment cannot impact any MWlevel or Product in the past. Changes are bound in time with the earliest possible change starting at the time the Authority [Service](#) receives the Request and the latest possible change ending at the Tag Stop Time.

## 4.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations
- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.
- If the message passes validation and a Secondary Service URL is registered for the Approval Service, the valid message received by the Approval Service must be sent to its Secondary Service URL.

### 4.6.2.1 Processing a New e-Tag Request Distribution

Verify Semantics – the following rules must be met in order to constitute a valid New e-Tag Request Distribution:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- A e-Tag with the ID presented must not already exist on the Approval Service
- An e-Tag designated as ATF must be clearly identifiable. The Approval Service user interface must be designed so that ATF e-Tags are differentiated/highlighted by color, text, or some other mechanism that ensures the e-Tag Approver is aware that the e-Tag is ATF.

### 4.6.2.2 Processing a Correction Request Distribution

The following validation criteria must be checked when an Approval Service receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tag creation Requests that do not have an Approval State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

Upon receipt of a valid Correction Request Distribution, the Approval Service must take the following actions:

- Immediately replace the previously received information with the corrected information
- Alert the e-Tag Approver that the correction has occurred, highlighting the correction for their inspection
- Immediately consider any previous approval action (setting the approval State of the affected entity to either APPROVED, DENIED, or STUDY) to be reset

### 4.6.2.3 *Processing a Profile Change Request Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

### 4.6.3 Request Actions

The following procedure should be used by ~~approval services~~ Approval Services when taking actions on requests:

- Encode the message in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

#### 4.6.3.1 *Approving and Denying Request*

The e-Tag Approver must indicate their decision to support or refute the Request. Valid Approval States are defined in Section 1.3.4.2. States of Denied and Study MUST be accompanied with reasons for the choice. States of Approved MAY be accompanied with reasons or comments. The Approver must specify the Request ID that is being acted upon, and must include their assigned Security Key in order for the SetState method call to be processed correctly.

The following validation criteria must be checked when ~~aan~~ Approval Service sends a Set Approval State message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The SetState call may not reference any Request that has already been resolved (i.e. has a current final state).
- States of Denied and Study must be accompanied by a reason
- ~~The version of data being corrected must be the most recent correction held by the Authority~~

#### 4.6.3.2 *Withdrawing a Request*

Approval ~~services~~ Services may withdraw profile change requests.

The following procedure should be used to withdraw a Request:

- Write the withdraw message and encode it in a valid XML format (as described by the latest e-Tag schema). The Message must include the following items:
  - The Request ID provided by the Authority Service at the time the request was made.
  - –The original Security Key for the transaction that was used in the e-Tag Creation message.
  - ~~A reason that explains why the Withdrawal was made.~~
- Withdraw messages must not be sent for requests that have already reached a final state (APPROVED, etc.).
- Look up (in the Electric Industry Registry) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- WITHDRAWN is a final states for the Request.

## 4.6.4 Approval Service Information Distribution

### 4.6.4.1 *Processing a Request Approval State Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Status message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service initially transferred the New e-Tag Request to the Approval Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

### 4.6.4.2 *Processing a Request Resolution Distribution*

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the Approval Service
- The Security Key presented must be identical to the original Security Key assigned at the time the Authority Service transferred the New e-Tag Request to the Approval Service

- The rules described in the Data Model and Method Descriptions sections must not be violated

#### **4.6.4.3 Potential TLR Profile Change Distributions**

The Approval has no requirements with regard to the Distribution of Potential TLR Profile Changes.

### **4.6.5 Recovery Functions**

#### **4.6.5.1 Synchronous Queries**

Synchronous Queries include the following:

- QueryTag
- QueryRequestIDs
- QueryRequest
- QueryStatus
- QueryAvailability

The following procedure should be used to initiate all synchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

##### **4.6.5.1.1 Query for an e-Tag**

Tag approval service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request.

##### **4.6.5.1.2 Query for Request Ids**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request. Optionally, the user may elect to filter RequestID's based on the resolution of the requests associated with the e-Tag (i.e., show only Activates Requests).

##### **4.6.5.1.3 Query for a Request**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID they wish to retrieve.

##### **4.6.5.1.4 Query for a Request's State**

~~Tag approval service~~ Approval Service must specify a valid e-Tag ID and the associated Security Key they were assigned when given the original New e-Tag Request, as well as the Request ID for which they would like State information.

#### 4.6.5.1.5 Query for System Availability

~~Tag approval service~~ Approval Service must specify a particular system for which to query availability (by entity desk and service type (Agent, Approval, Authority, ~~RAS~~ and RA Services)).

#### 4.6.5.1.6 Processing Queries for System Availability

~~Approvals~~ Approval Services should respond back to Queries for System Availability as follows:

- If the Approval Service is operating correctly, the Return Value should be SUCCESS.
- If the Approval Service is not operating correctly, the Return Value should be FAIL.
- If a known error is occurring, the Approval Service should indicate that error.

### 4.6.5.2 Asynchronous Queries

Asynchronous Queries include the following:

- QuerySummaries
- QueryTags
- QueryHistory

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag, or, for Query Summaries, identify a unique list (select distinct) of Authority URL's Service URLs. Send the XML message(s) created during the first step to this/these URL(s) as the payload of an HTTP POST message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.
- Wait for a response message(s) from the Authority Service. The response message(s) will be over a new HTTP connection (not part of the query submission described in previous steps). The response will be sent to the Approval Service's registered service URL, and will include the same ~~security key~~ Security Key used by the Agent Service to submit the query. The Agent should perform syntactic and semantic validation on the query response message from the Authority Service, and reply to the query response message with either a success reply or a Fault/Error reply.

#### 4.6.5.2.1 Query Summaries

The ~~approval-service~~ Approval Service must specify either an Active Range or a Last Modified Range for which they want e-Tag summaries to be returned. The Active Range is used to specify a range of time during which an e-Tag must have been “active” (i.e., either the first start date/time pair or the last stop date/time pair of the e-Tag is within the Active Range). The Last Modified Range is used to specify a range of time during which the e-Tag had a request made against it (New e-Tag Requests, Correction Requests, and Profile Change Requests).

When ~~either~~ an ~~approval~~ Approval or ~~agent-service~~ Agent Service requests recovery over an outage range, the requesting service must create a list of unique ~~URL's for~~ Authority services Services URLs and send the Query Summary messages to each ~~authority service~~ Authority Service in order to retrieve all e-Tags for which that e-Tag ~~approval~~ Approval or ~~agent-service~~ Agent Service is a party. For ~~Authorities~~ Authority Services that are shared between multiple companies, only one QuerySummaries message is required. The ~~Tag~~-Authority Service should return data for all tags that are visible to the requestor in this case, regardless of which the ~~Authority's~~ Authority Service's companies is listed as the intended message recipient.

The User must also generate and specify a Security Key with which the Callback can be secured.

The following validation criteria must be checked when an Approval Service submits a Query Summaries message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The Range specified must not exceed twenty-~~four~~ (24)five (25) hours. Systems may, at their option, reject any single query that indicates a desire for more than ~~24~~ 25 hours of information.

The following validation criteria must be checked when an ~~approval-service~~ Approval Service receives a Query Summaries Callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the Approval Service transferred the Summaries Query to the Authority Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

#### 4.6.5.2.2 Query e-Tags

The Agent ~~service~~Service must provide a list of e-Tag IDs and Security Keys for all e-Tags to be queried. Agent Service must also specify a Return Rate, which indicates how many e-Tags the Agent Service wishes to receive within each callback. Missing ~~security keys~~Security Keys can be recovered using the Query Summaries message. The User must also specify a separate Security Key for the query with which the Callback can be secured.

**Special Note:** Query e-Tags may return more than one callback, depending on how the user configures their original query and how the Authority Service is configured.

The following validation criteria must be checked when an Agent Service receives a Query e-Tags Callback message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- The e-Tag IDs presented must match the e-Tag IDs requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query

#### 4.6.5.2.3 Query History

The Approval Service must specify a valid e-Tag ID and Security Key. The ~~security key~~Security Key should be the same key that was used when creating the e-Tag (for e-Tag authors), or the ~~security key~~Security Key provided by the Authority Service through a Distribute message. Missing ~~security keys~~Security Keys can be recovered using the Query Summaries message.

The following validation criteria must be checked when an Approval Service receives a Query History Callback message:

- The e-Tag ID presented must match the e-Tag ID requested in the original query
- The Security Key presented must be identical to the original Security Key provided with the original query
- The rules described in the Data Model and Method Descriptions sections must not be violated

## 4.7 Availability and Performance

Availability and performance requirements are specified in NERC/NAESB Standards, as well as a description of what actions to take during a system outage to ensure transaction of business is not halted.

The requirements defined in the standards are only applicable to primary service implementations; implementations identified via a Secondary Service URL are exempt from specific requirements identified in the standards, but are expected to be available to receive and process messages in a timely fashion. If an entity (or the third-party providing its service) expects that a Secondary Service URL implementation will be offline for a significant time period, the Secondary Service URL should be de-activated through the applicable registration process. *The use of a Secondary Service URL does*

*not impact the obligations of the primary implementation to adhere to the requirements specified in the standards.*

## Section 5 - Reliability Authority Service Functional Requirements

### 5.1 Introduction

RASsRA Services are used by Reliability Coordinators (RCs) to identify transactions for curtailment, reallocation, and reloading. Functions of a RASRA Service with regard to Reliability Authority and operations are determined by the NERC IDC Working Group or other industry groups. The information below describes the role of a RASRA Service with regard to the e-Tag system.

### 5.2 Registry Usage

RASsRA Services shall be responsible for maintaining an updated list of all registered PSEs, Transmission Service Providers (~~TSPs~~), ~~Balancing Authorities~~ (BAs), and any other such entities whose identities must be uniquely specified in connection with the arrangement of an Interchange Transaction. ~~The Electric Industry Registry~~ A list of all such entities shall be maintained and available for downloading from the ~~Electric Industry Registry~~ EIR web site. RASsRA Services shall supply a procedure to allow updates from the ~~Electric Industry Registry~~ EIR on demand or on a prescheduled interval. The ~~Electric Industry Registry~~ EIR shall be maintained in a format defined by the NERC/NAESB ~~Joint Interchange Scheduling Working Group~~ JESS.

RASs

RA Services must support the receipt of unsolicited messages sent by ~~Authorities~~ Authority Services. To enable the delivery of these messages, the user must register the appropriate service identification information in the ~~Electric Industry Registry~~ EIR and be capable of receiving e-Tag messages.

### 5.3 e-Tag Data Entry and Viewing

User Interface rules for RASsRA Services are defined by the NERC IDC Working Group or other industry groups.

### 5.4 Date and Time Handling

RASsRA Services shall be responsible for the conversion of all date and time related input fields to ~~Universal Coordinated Time~~ (UTC) prior to information being exchanged with any other service. Valid times during the day shall be from 00:00:00 to 23:59:59.

RASsRA Services' user interfaces are free to accept and manage the conversion of any appropriate date/time formats at the discretion of the service provider. The internal representation of date and time within the RASRA Service is also entirely at the discretion of the service provider. However, all electronic transmittal of data shall be in UTC time.

### 5.5 Data Validation

RASsRA Services shall ensure that all data elements in a communication are legitimate and that no syntax or validation rules have been broken.

### 5.6 Function Implementation

The RASRA Service is responsible for being able to call the following methods:

- RequestProfileChange
- SetState
- DistributePotentialTLRProfileChange

And process the following methods:

- DistributeNewTag
- DistributeCorrection
- DistributeProfileChange
- DistributeResolution

Semantics, including calling and processing rules are described in detail in the following sections.

## 5.6.1 Initiating a Request

~~Reliability Authority services~~ RA Services may only issue one type of Request – the Profile Change Request. The following procedure should be used to validate and process a new e-Tag Creation request:

- Write the new Request and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Authority Service URL associated with the ~~load control area~~ Sink BA on the e-Tag. Send the XML message created during the first step to this URL as the payload of an HTTP message, and wait for the response.
- If the submission fails or the response contains fault or error messages, do not automatically retry the submission. Log the error and correct the problem before attempting resubmission. If the response succeeds, then process any data returned by the Authority Service.

### 5.6.1.1 Submitting a Profile Change Request

The following validation criteria must be checked when a ~~RAS~~ RA Service creates a Profile Change request message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may **only** be made to e-Tags that have been CONFIRMED or IMPLEMENTED
- The Profile Changes must not affect points in time more than one (1) hour in the past with the exception of DYNAMIC e-Tags, which must not affect points in time more than 168 hours in the past.

## 5.6.2 Request Distribution

The following procedure should be used to process all Request Distribution messages:

- Decode the XML message
- Perform any required validations

- If the Request Distribution passes validation, then return a success response, otherwise return fault or error as appropriate.

### **5.6.2.1 Processing a New e-Tag Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute New e-Tag message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- An e-Tag with the ID presented must not already exist on the [RASRA Service](#)

### **5.6.2.2 Processing a Correction Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute Correction message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Corrections may not be made to e-Tags that do not have a Composite State of PENDING.
- Corrections may not be made that violate the rules defined in NERC/NAESB Standards regarding appropriate use of correction

### **5.6.2.3 Processing a Profile Change Request Distribution**

The following validation criteria must be checked when a [RASRA Service](#) receives a Distribute Profile Change message:

- The rules described in the Data Model and Method Descriptions sections must not be violated
- Profile Changes may not be made to e-Tags that have not been CONFIRMED or IMPLEMENTED

## **5.6.3 Information Distribution**

### **5.6.3.1 Processing of a Request Resolution Distribution**

The following validation criteria must be checked when an Approval Service receives a Distribute Resolution message:

- The e-Tag ID Referenced in the message must be one held by the [RAS](#)
  - [RA Service](#)
- The Security Key presented must be identical to the NERC-assigned Security Key for [RASRA Service](#) communications.
- The rules described in the Data Model and Method Descriptions sections must not be violated

### **5.6.3.2 Distribution of a Potential TLR Profile Change**

*Note – The following actions describe the role of the NERC Interchange Distribution Calculator (IDC) with regard to the generation of curtailment prescriptions. While other [RASs/RA Services](#) may choose to implement this feature, it is not strictly required.*

The following procedure should be used to initiate all asynchronous queries:

- Write the query and encode it in a valid XML format (as described by the latest e-Tag schema).
- Look up (in the ~~Electric Industry Registry~~ EIR) the Agent Service URL associated with the PSE listed as the e-Tag author for the e-Tag impacted by the Potential TLR profile change

~~Agents~~ Agent Services may implement a callback mechanism to verify validity of the distribution, but are not required to do so.

The following validation criteria must be checked when a ~~RAS~~ RA Service receives a Potential TLR Profile Change callback message:

- The Security Key presented must be identical to the original Security Key provided at the time the ~~RAS~~ RA Service transferred the Potential TLR Profile Change to the Agent Service
- The rules described in the Data Model and Method Descriptions sections must not be violated

## **5.7 Availability and Performance**

Availability and Performance Requirements for the ~~RASs~~ RA Services are defined by the NERC IDC Working Group or other industry groups.

## Section 6 - Data Model Overview

### 6.1 Tag Data

#### 6.1.1 Transaction Types

E-Tag ~~1.7~~ recognizes the following transaction types:

**Normal:** These are the “normal energy schedules” and should be the largest number of schedules. They will include schedules that use point-to-point, network integrated transmission service, or grand-fathered service under a regional tariff. These schedules are included in the IDC and are subject to TLR curtailment.

**Dynamic:** A dynamic schedule is scheduled using an expected value but the actual energy transfer is determined in real time by separate communications external to the e-Tag system. Also included in this type will be regulation energy schedules and energy imbalance schedules. The e-Tag should contain the expected average energy in the energy profile and contain the maximum expected energy in the transmission allocation. Dynamic e-Tags may be adjusted by the source BA, sink BA, or e-Tag author up to 168 hours in the past using a market adjust to set the actual interchange value.

**Emergency:** Emergency Schedules, including reserve sharing, Spinning Reserve, and Supplemental Reserve may be scheduled as Emergency Schedule Type. Another kind of emergency schedules is execution of an operating guide that implements schedules in response to a loading problem. For example, an RTO based emergency re-dispatch that lasts longer than an hour involving multiple Balancing Authorities. Typically, EMERGENCY schedules would not require reservations before being used where Capacity Benefit Margin had been calculated to allow for this reserve sharing.

**Loss Supply:** Used for customers self-supply losses. This type is used to differentiate between a loss schedule and a normal schedule. Some tariffs presently require that schedules for losses require different treatment than schedules for the associated energy.

**Capacity:** Typically used for entities to import operating reserves from outside their reserve-sharing group but may also be used to arrange for purchases or sales of Spinning Reserve and Supplemental Reserve between other entities. This type of e-Tag may be activated upon contingency with zero ramp durations.

**Pseudo-Tie:** A dynamic transfer implemented as a pseudo-tie rather than a dynamic schedule. Used in the same way as a Dynamic e-Tag. These tags may be adjusted in the same manner as Dynamic transaction type e-Tags.

#### 6.1.2 Market Segments

Market Segments represent those portions of the path that are associated with the tracking of title and responsibility. A Physical Segment is always associated with a parent Market Segment. However, the opposite is not true; Market Segments can exist independent of Physical Segments.

Market Segments contain information that describes the market information, such as the identity of the market participant, the firmness of energy the market participant is delivering, and the physical segments the entity is responsible for providing. Market Segments must be listed in order from GPE to LSE and numerically identified as such (e.g., GPE segment = 1, Intermediate PSE segment =2, LSE segment = 3).

GPE and LSE segments must contain an energy product. Market Segments may only utilize products in the Electric Industry Registry related to Generation or Load.

### **6.1.2.1 Scheduling Responsibilities**

Market Segments can describe a responsibility for managing the scheduling for a portion of the transaction. This is seen when a marketer has rights to a resource and wishes to exercise those rights (i.e., a generation merchant wishes to generate energy for sale, a load serving entity wishes to consume energy based on a purchase, or a marketer wishes to physically move energy from one area to another). When this occurs, the market segment will contain the physical segments over which the marketer has scope.

### **6.1.2.2 Title Transfers**

Market Segments can also describe non-physical title transfers. These are seen when a market participant takes financial possession for the energy commodity, but does not physically move that energy before transferring possession to another financially responsible party. When this occurs, the market segment will not contain any physical segments.

### **6.1.3 Physical Segments**

Physical Segments represent those portions of the path that are physical in nature and represent a movement of energy. There are three types of physical segment: Generation, Transmission and Load. Physical segments must be listed in order from generation to Load and numerically identified as such (i.e., Generator segment = 1, first TSP Transmission Service Provider segment =2, second TSP Transmission Service Provider segment = 3, Load segment = 4). Generation segments must always be listed first, while Load segments must be listed last. E/\*-Tags may only have one Generation segment and one Load segment. All physical segments must reference a parent market segment, identifying the market entity responsible for the physical segment. These references must also be in an order that matches that described by the market segments. For example, the following represents a valid description of a transaction:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 2  
Load: Physical Segment 3, Parent Market Segment Ref 3

In this example, the chain of ownership and physical path are aligned properly. When combined, the results identify a clear tracking of title and scheduling path:

GPE: Generator  
PSE: Transmission  
LSE: Load

However, the following example is invalid:

GPE: Market Segment 1  
PSE: Market Segment 2  
LSE: Market Segment 3

Generator: Physical Segment 1, Parent Market Segment Ref 1  
Transmission: Physical Segment 2, Parent Market Segment Ref 3  
Load: Physical Segment 3, Parent Market Segment Ref 2

In this example, the references indicate a paradox: when combined, invalid results are produced:

GPE: Generator  
PSE: Load ←out of sequence  
LSE: Transmission ←out of sequence

Such cross references are invalid.

### **6.1.3.1 Generation**

Generation Segments contain information that describes a generation resource, such as the location of the generation, the firmness of the energy supplied by the resource, and contract references that identify the resource commitment. Generation Segments may only utilize products in the Electric Industry Registry related to Generation.

### **6.1.3.2 Transmission**

Transmission Segments contain identification that describes a transmission service, such as the identity of the provider, the POR and POD of the service, the firmness of the service, simple loss information, and contract references that identify the service commitment. Transmission Segments may only utilize products in the Electric Industry Registry related to Transmission.

#### **6.1.3.2.1 Scheduling Entities**

Scheduling Entities must be registered as Balancing Authorities in the Electric Industry Registry. Many Transmission Service Providers require that e-Tags illustrate not only the contractual relationship between the Transmission Service Provider and the transmission customer, but also the internal scheduling information to implement the transmission service sold under their tariff. To this end, Scheduling Entities may be defined for a particular Transmission segment. These entities must be listed in the proper scheduling path order (for example, importing BA, intermediate BA, exporting BA).

In the event a listed POR or POD in the Transmission Segment is listed in the Electric Industry Registry as being a DC Tie, then its registered Balancing Authority must be listed in the e-Tag as a scheduling entity.

NERC/NAESB Standards indicates that Scheduling Entities are optional items in an e-Tag. While there is no requirement in this Specification (or the XML Schema associated with it) that Scheduling Entities be listed, it should be noted that NERC/NAESB Standards requires that scheduling paths be contiguous and verified by all scheduling entities before an e-Tag is approved. Failure to include the proper scheduling entities (or failure to include them in the proper order or location) will likely result in a denied e-Tag.

### 6.1.3.3 Load

Load Segments contain information that describes a load, such as the location of the load, the interruptability of the load, and contract references that identify the load obligation. Load Segments may only utilize products in the Electric Industry Registry related to Load.

### 6.1.4 Profile Sets

Profile Sets define the level at which transactions should run, as well as the factors that set those levels. Profiles are specified as a series of time-ordered segments of duration associated with a particular profile type or types. These segments may be repeated on multiple days, if so desired. Profiles are specified as either *relative* or *absolute*, depending on the type of profile.

A *Relative* profile is described through the use of two or more values which, when combined, create a matrix of profiles. For example, a relative profile may specify a set of reference date-times (01/01/2001 06:00:00, 01/02/2001 06:00:00,) and a set of offsets relative to that date-time (00:00, 02:00, and 04:00). When multiplied together, the resultant matrix is as follows:

	01/01/2001 06:00:00	01/02/2001 06:00:00
00:00	<b>01/01/2001 06:00:00</b>	<b>01/02/2001 06:00:00</b>
02:00	<b>01/01/2001 08:00:00</b>	<b>01/02/2001 08:00:00</b>
04:00	<b>01/01/2001 10:00:00</b>	<b>01/02/2001 10:00:00</b>

Doing so reduces the size of the data significantly (in this case, instead of six explicit date times, only two explicit date times must be supplied, along with three simple time offsets).

An *Absolute* profile is described through the use of explicit date times. The above example, defined through absolute profiles, would be as follows:

<b>01/01/2001 06:00:00</b>
<b>01/01/2001 08:00:00</b>
<b>01/01/2001 10:00:00</b>
<b>01/02/2001 06:00:00</b>
<b>01/02/2001 08:00:00</b>
<b>01/02/2001 10:00:00</b>

While more verbose, the use of such profiles is more effective when only small profiles are to be specified, or when explicit dates in a relative profile must be referenced.

In all cases, start times must always be earlier than their associated stop times.

Both Relative and Absolute profiles may optionally contain ramp duration (in minutes) associated with both start time and stop time. The ramp stop time is not needed (and is ignored) in any profile except for the last profile. The ramp duration specifies the number of minutes over which the generator will change from the previous block level to the current block level. Interchange schedule ramping is executed between BAs using straddle ramp methods as defined above. The ramp duration exists in the e-Tag in order to provide a vehicle by which ramp duration may be exchanged between entities.

Ramps may not overlap. Agent ~~Software, e-Tag~~, Approval ~~Software~~, and Authority ~~Service~~ software must include at least this validation plus any validation required by NERC, NAESB, or RRO standards.

### **6.1.4.1 Profile Types**

There are five main types of profiles: Market Level, Reliability Limit, Dynamic Minimum Energy, Dynamic Maximum Energy, and Current Level.

#### **6.1.4.1.1 Market Level**

The Market Level defines the level at which the e-Tag author wishes the transaction to run. This level can be used to specify an initial value for a dynamic schedule, as well as a simple level at which the transaction is to be run.

#### **6.1.4.1.2 Reliability Limit**

The Reliability Level defines the maximum allowable level at which a transaction may run when that transaction has been identified by a Reliability Coordinator or other reliability entity as being limited by some constraint. This limit is typically used to indicate curtailments.

#### **6.1.4.1.3 Dynamic Minimum Energy**

Dynamic Minimum Energy specifies a level at which a Dynamic Schedule must minimally run. This level is provided for information purposes only.

#### **6.1.4.1.4 Dynamic Maximum Energy**

Dynamic Maximum Energy specifies a level at or under which a Dynamic Schedule must run. This level is provided for information purposes only.

#### **6.1.4.1.5 Current Level**

Current level contains the level at which the transaction should be running based on all approved Requests processed in order of receipt by the Authority ~~Service~~.

### **6.1.4.2 Profile Usage**

The above-described profiles can be used in two different ways: as Base Profiles and as Exception Profiles.

**6.1.4.2.1 Base Profiles**

Base Profiles describe the initially requested profile for implementation. At no time should there be more than one base profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from 6-22 and 8-12 for the same provider). Note that it is acceptable for profile types associated with Dynamic Schedules to overlap (i.e., Dynamic Minimum 0MW from 6-22, Dynamic Maximum 100MW from 6-22, MarketLevel 80MW from 6-22).

Different types of transactions have different Base Profile requirements:

PROFILE TYPE	REQUIRED DATA FOR BASE PROFILE
GENERATION	MARKET LEVEL DYNAMIC MINIMUM ENERGY (for Dynamic Schedule Types) DYNAMIC MAXIMUM ENERGY (for Dynamic Schedule Types)
TRANSMISSION POR	MARKET LEVEL
TRANSMISSION POD	MARKET LEVEL
LOAD	MARKET LEVEL

The Authority Service will calculate the Base Current Level profile. It is not valid for a Profile Change to contain a Base Profile.

**6.1.4.2.2 Exception Profiles**

Profile Modifications, or Exceptions, describe changes to the profile of the e-Tag that must be implemented in place of the original profile for a specified period of time. In all cases, the requested modification to the profile must go through an approval process. At no time should there be more than one exception profile of the same profile type in effect for the same point in time (i.e., it is invalid to have both a market level profile from Hours Ending 6-22 and Hours Ending 8-12 for the same provider). While it is possible to request an exception that overlaps a previous exception, the end result will be a single exception profile that covers the union of the prior exception and the new exception.

It is not valid for either a Newnew e-Tag or a Correction to contain an Exception Profile. The Services are responsible for determining the appropriate Current Level based on the profiles in their possession and generating the Current Level Profile.

**6.1.4.2.2.1 Market Level Exceptions**

A Market Level Exception defines the maximum level at which the e-Tag Author wishes the transaction to run if it differs from the original Market Level. This value is designed to allow the e-Tag Author to change the level of flow for a transaction, but continue to keep the capacity committed as originally specified. In so doing, the e-Tag Author reduces the need for detailed evaluation by Transmission Service Providers, as the originally requested transaction already specified appropriate transmission resources.

**6.1.4.2.2.2 Reliability Limit Exceptions**

The Reliability Limit defines the maximum level at which a Reliability Coordinator, Balancing Authority, or Transmission Service Provider wishes to run the transaction if it differs from the Market Level. This level is designed to change the level of flow for a transaction due to TLR events, USF, loss of generation, and loss of load.

## 6.1.5 Transmission Allocations

Transmission Allocations are a special kind of profile set that defines the way in which market participants will fill their capacity commitments with transmission reservations. Transmission Allocations specify a particular reservation, the provider associated with the reservation, and profiles associated with that reservation that describe how the reservation should be consumed. Transmission Allocations must always be associated with Transmission Physical Segments; association with other segments (such as Generation or Load) is not allowed. The Maximum Reservation Capacity associated with each physical segment should be greater than or equal to the energy profile. This is validated by the Tag-Authority [Service](#) for new Tag creation requests only. Validation of subsequent adjustment Requests by the Authority [Service](#) is problematic due to sequencing and approval issues.

The transmission allocation for all transmission segments must be greater than or equal to the minimum of the POR profile and POD profile for that segment.

There are two types of profiles, both specified with Maximum Reservation Capacity profiles: Base Allocation Profiles, and Exception Allocation Profiles.

### 6.1.5.1 **Base Allocation Profiles**

Base Allocation Profiles define the original manner in which transmission reservations were allocated to meet capacity commitments. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed. These segments may be repeated on multiple days, if so desired.

### 6.1.5.2 **Exception Allocation Profiles**

Exception Allocation Profiles define the manner in which transmission reservations are allocated to meet capacity commitments during changes to a Base Allocation Profile. They are specified as a series of time-ordered segments of duration and the transmission capacity to be consumed, and supersede data supplied in their corresponding base profile.

## 6.1.6 Loss Accounting

Loss Accounting data specifies the manner in which losses should be accounted for over a specified period of time. Over time, an e-Tag Author may elect to specify different choices for how losses will be provided. Each specification creates (or overwrites) Loss Method Entries, which are used to determine how losses are to be applied.

## Section 7 - Messaging Overview

### 7.1 Messaging Concepts

#### 7.1.1 Use of the Transmission Control Protocol/Internet Protocol

The services defined in this document utilize the public Internet as their physical communication layer. Therefore, the underlying root protocol for this specification shall be Transmission Control Protocol/Internet Protocol or TCP/IP. Utilization of Hypertext Transfer Protocol Secure or HTTPS ~~based on using~~ NAESB PKI standard compliant certificates is expected to be required. The requirement for NAESB PKI standard compliant client certificates will be phased in over time as infrastructure, such as the Electric Industry Registry, are available to support the implementation. Additionally, the services defined in this document shall send data via both Port 80 and 443, the common known port for HTTP and HTTPS respectively, or any other port specified in the URL supplied in the registry, using TCP connections. The use of HTTP or HTTPS will be based on the fully qualified URL. For HTTPS connections, a client certificate may be used. The recipient of an HTTPS connection must verify that the client certificate presented (if one is present) is valid for the sending entity.

When participating entities register for service, they will be required to supply information on the manner in which their implementation will address certain needs. Explicitly, they will need to define:

- URL, Certificate Issuer, and Common Name for Authority Service (~~Balancing Authorities~~ BAs only)
- URL(s) for Reliability Authority Coordinator Forwarding (~~Balancing Authorities~~ BAs only)
- URL, Certificate Issuer, and Common Name for Approval Service (~~Balancing Authorities~~ BAs, Transmission Service Providers, and optionally Purchasing Selling Entities PSEs)
- URL, Certificate Issuer, and Common Name for Agents (~~Purchasing Selling Entities~~ Agent Services (PSEs and optionally ~~Balancing Authorities~~ BAs)

For the purposes of this document, a URL (~~Uniform Resource Locator~~) can be considered a two-part description of a resource. The first part describes the scheme used to communicate and the host the communication is to take place with:

~~http://www.nerc.com~~ http://www.nerc.com or https://www.nerc.com

The second part is the ~~URI, or~~ Uniform Resource Identifier (URI). It describes a particular resource on a host:

/~gads/meetings.html

This distinction is important in that when implementing this Interface, the first portion of a URL will define the host to connect to, while the URI will define what resource to apply HTTP or HTTPS request to. Therefore, the following URL:

~~http://www.nerc.com/~gads/meetings.html~~

http://www.nerc.com/~gads/meetings.html

would be interpreted in the following manner:

<TCP/IP command> connect to “www.nerc.com”  
<Application specific command> write the HTTP request to the connection

In the above example, the request would be:  
“GET /~gads/meetings.html HTTP/1.1”

Both client and server certificates used for e-Tag communications must be compliant with NAESB PKI standards.

### **7.1.1.1 Establishing Connections**

Establishing connections should be handled in the manner defined by the TCP/IP protocol.

**For automated responses to queries, automated distributions, and other actions not specifically initiated by a person’s action (CallbackHistory, CallbackSummaries, CallbackTags, DistributeCorrection, DistributeNewTag, DistributePotentialTLRProfileChange, DistributeResolution, DistributeProfileChange, DistributeStatus, RequestProfileChange\*):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must follow the procedures below prior to assuming the recipient’s service is unavailable and indicating a message failure:

At least three (3) attempts must be made to make the connection, with no less than five (5) seconds between each attempt, with the maximum time between the first and last attempts not to exceed two (2) minutes.

**For actions specifically initiated by a person’s action, such as Requests, Actions, and Queries (QueryHistory, QueryRequest, QueryRequestIDs, QueryStatus, QuerySummaries, QueryTag, QueryTags, RequestCorrection, RequestNewTag, RequestProfileChange\*, SetState, WithdrawRequest):**

Should a connection attempt fail or any response other than a valid e-Tag Schema response be received, the service initiating the connection request must assume the other service is unavailable and *immediately* indicate a message failure.

In both cases, message failures must alert the operator of the service attempting to send the message.

\*If an automated system is issuing RequestProfileChange (i.e., an RAS), then the system *must* retry the connection. If the issuer is a person or operator, the system *must not* retry the correction, and instead alert the operator of the failure.

#### **7.1.1.1.1 Partial Connection Failures**

Should a connection attempt appear to fail between the Agent, Authority, and/or ~~Approvals~~ Approval Services, yet messaging succeeded, an invalid set of errors may be encountered by re-sending the same message (i.e., e-Tag ID Not Unique errors), leading

the sender to report incorrect error information. Should such a message duplication be attempted, the receiving service must respond back with a return State of DUPLICATE, and return any original additional response data back to the user (i.e., information other than that contained in the ReturnState data structure). This requirement does not apply to messages that it is valid to send multiple times such as query messages.

A message shall be considered a duplicate if

- The method called is the same as the previous message and,
- The entire MessageInfo data collection is the same as the previous message.

It should be noted that this behavior may only occur when messages are duplicates. For instances where a request is made and the information is *not* duplicated, the message must either be processed as a new message or marked as an error, depending on the specific situation (for example, submitting a new e-Tag with a previously submitted e-Tag ID is invalid, but submitting a new Profile Change must be processed normally).

#### 7.1.1.1.2 Combining Messages

Previous versions of e-Tag allowed for the combining of messages in order to reduce messaging overhead. For ~~Balancing Authorities~~ **BAs**, Transmission Service Providers, and ~~Purchasing/Selling Entities~~ **PSEs**, this functionality is no longer supported; for each specific entity, a distinct and separate message must be sent. For ~~Reliability Coordinators~~ **RCs**, it is still allowed to send one message per unique forwarding URL.

## 7.1.2 Use the Hypertext Transport Protocol

e-Tag messaging is accomplished through the use of the Hypertext Transport Protocol (HTTP) over the public Internet, optionally using SSL (HTTPS). The e-Tag services defined in this document utilize HTTP 1.1.

### 7.1.2.1 HTTP/S Requests

The services defined in this document utilize a single HTTP method: the POST method. This method is used for sending data to a server for processing. The standard format of an HTTP Request Header is as follows:

<HTTP method> <resource URI> <HTTP Version>

In this implementation, all Request Headers will exist as the following:

POST <resource URI> HTTP/1.1

This specifies the POST method is to be used, the path and name of the processing resource, and that using HTTP 1.1 is the protocol and version being used. Additional header fields required are described below:

Content-type: text/xml

Declares that the type of data attached to the POST request will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient utilizes this byte length to retrieve the Payload

SOAPAction:NERCETag18:<method name>

Indicates that the action being requested is part of the NERC e-Tag 1.8 library of methods, and specifies the method being called.

A Carriage Return/Line Feed terminates each header line. The request is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP headers, followed by the Entity Data or Payload.

### 7.1.2.2 HTTP/S Responses

HTTP Responses are returned to a client with the following syntax:

<HTTP Version> <State Code> <Explanation>

The State codes below are utilized and understood by the ~~HS~~e-Tag services defined in this document:

200	OK	States that the POST request was accepted and appears to be valid
400	Bad Request	States that the POST request was accepted but appears to point to an invalid URI or does not contain a valid Content-Type

Successful responses will be followed with an entity descriptor, describing the data to follow:

Content-type: text/xml

Declares that the type of data attached to the response will be an XML data set

Content-length: <integer>

Describes in bytes the length of the following attachment. The recipient uses this byte length to retrieve the Payload.

A Carriage Return/Line Feed terminates each response line. The response is completed by sending a Carriage Return/Line Feed on an empty line marking the end of the HTTP response, followed by the Entity Data or Payload. The payload for the purposes of this document shall be an e-Tagging Messaging Protocol message.

The server terminates the connection when the last of the payload has been transmitted.

### 7.1.3 How SMXP Works

All e-Tag 1.8 messages are sent using the SMXP (Simple Method Exchange Protocol). This protocol is based upon a *remote procedure call* paradigm. This means that instead of sending messages explicitly, you invoke procedures on remote machines, and pass any needed data as input parameters to the function. When the function is complete, it returns the result of its processing. The SMXP protocol is layered on top of the HTTP protocol, which handles all of the underlying communication. SMXP defines the set of rules for

encoding remote procedure call parameters into HTTP POST messages, as well as the set of rules for how such messages must be processed by a remote server.

The steps of executing an SMXP method are as follows:

- A request is generated, containing the method name and any needed parameters.
- The request is sent via HTTP to a listener on the remote machine.
- The remote machine receives the SMXP request, and examines it to determine which method must be executed.
- The remote machine executes the appropriate method and packages the result into an SMXP compliant XML document.
- The remote machine returns that document to the calling machine (again via HTTP).

Each SMXP method call has two important parts – the request and the response. Most of the methods used in e-Tag 1.7 are *synchronous* methods, meaning that once the calling machine makes a request, it waits for a response containing the results of its request before continuing.

In a few cases, *asynchronous* methods are used. In an asynchronous method, a request is generated and sent to a remote machine. The remote machine places the request into a queue, and sends a response to the calling machine that indicates the request has been received and queued for processing. The connection is then terminated. At some point in the future, the remote server runs the requested method and sends the result to the calling machine via a separate SMXP message (requiring a second request/response pair). Electronic e-Tagging systems are only required to support the processing of one method call per connection session. Multiple calls per session are not supported.

## 7.1.4 Method Types

E-Tag 1.7 uses various types of methods for various purposes. The methods can be broken up into the following categories.

### 7.1.4.1 **Requests**

A request method is any method that initiates an action associated with a transaction. Such actions include e-Tag submission and adjustment.

### 7.1.4.2 **Request Distributions**

Request Distributions are the methods used to send requests to the all entities impacted by the e-Tag. Request distributions may be informational, or may indicate a requirement for approval.

### 7.1.4.3 **Actions**

Actions are those methods that directly set a value. These methods include request approval, denial, and withdrawal.

#### **7.1.4.4 Information Distributions**

Informational distributions are the methods used to send information related to the State of a particular request or set of transactions. These are sent to entities to alert them of particular requests implementation or withdrawal, as well as specific entities approvals and denial of a request.

#### **7.1.4.5 Queries**

Query methods are used to search and recover data from an Authority [Service](#) or similar service. Most query methods use parameters that allow the server to filter unneeded data and return the smallest reply message possible. Which parameters may be specified depends upon which query method is called. Many queries are asynchronous methods, meaning the results of the query will return via a callback. Others are synchronous, meaning the response contains the results of the query. Queries may be sent more than once for the same data, however, Queries sent more than five times for the same data may be rejected.

#### **7.1.4.6 Callbacks**

Callbacks are methods that are used to return results from asynchronous queries. Each callback will be associated with a previously called query that was used to create the result set.

### **7.1.5 Faults**

Fault messages are returned by any SMXP method that does not complete due to a structural error in the request. Such errors include any schema validation errors, such as incorrect data types and bad element ordering. Faults are also generated by message syntax errors, namespace errors, and some types of communication error. Fault messages indicate that processing was terminated before the requested procedure could be run. The SMXP specification defines the standard format and content for fault messages. Operators of the service attempting to send the message must be alerted to the receipt of any faults.

### **7.1.6 Return Values**

Each method returns a State code that reports whether or not the method call was successful. A Return value of "SUCCESS" indicates that there were no errors in the method invocation, and that valid data was passed into the method. A value of "FAIL" indicates that that the method did not run successfully. If the State code is set to "FAIL", then an error message must be included which describes the error that was encountered. Operators of the service attempting to send the message must be alerted to the receipt of any FAIL returns.

In certain cases, the method may return a value of "DUPLICATE." This value indicates that the method being called has been previously called with identical parameters and a response has already been returned. Typically, this value is received after a partial connection failure and subsequent retry.

## 7.1.7 Error Messages

Error messages are generated whenever a method does not complete successfully due to problems with provided parameters or execution of the query (unless the problems have already been defined by a fault or HTTP error message). If an error message is present, the State code must have a value of "FAIL". Error messages indicate that the method was executed, but was unable to fulfill the caller's request due to problems encountered during the processing of the request. Error messages can be caused by passing invalid (but syntactically correct) data to a method or by internal system failures or outages.

## 7.2 Method Descriptions

The six fundamental method types align with the system concepts defined in Section 1 of this document. Those types are Requests, Request Distributions, Request Actions, Information Distributions, Queries, etc. Details about the exact composition of these various data elements are defined in the latest e-Tag schema .

### 7.2.1 Special Data Structures

Some methods require specific data structures. In cases where the structure is unique to a particular method, the structure will be defined with the method description. Other generic structures are defined below.

#### 7.2.1.1 Tag ID

Tag IDs are values that uniquely identify an e-Tag. It is composed of four values:

- The Source BA's ~~NERC Acronym~~
- Entity Code
- The ~~Purchasing-Selling Entity's NERC Acronym~~ authoring PSE's Entity Code
- ~~A reference code~~ The e-Tag Code assigned by the PSE to aid in identification of the transaction
- The Sink BA's ~~NERC Acronym~~ Entity Code

The combination of these values must uniquely identify the e-Tag. At no point in time may two active e-Tags exist with the same e-Tag ID. To ensure this, an e-Tag ID may NOT be "reused" until a minimum of one (1) year has passed since the last point in time in which the e-Tag previously using the e-Tag ID ran.

#### 7.2.1.2 Message Info

Message Info is a collection of data used to describe the basic communication characteristics of an e-Tag message. Message info is composed of four values:

- The ~~NERC Acronym~~ Entity Code of the entity initiating the message transfer
- The Security Key used to ensure validity of the message
- The ~~NERC Acronym~~ Entity Code of the entity to whom the message is being transferred
- A date and time indicating when the message was generated

This information must be used to identify message participants, as well as provide simple authentication and audit information.

### 7.2.1.3 Return State

Return State is a collection of data used to indicate the general results of a message being processed. Return State has three specific components:

- A date and time indicating when the return was generated
- A State of the processing
- Optionally, a list of errors encountered during the processing of the message

This information must be used to communicate semantic problems with a message back to a message initiator.

### 7.2.1.4 Miscellaneous Info

In many messages, it is possible to communicate token/value pairs of non-standard information. This is included as a convenience and method for extending the e-Tagging system. By using the Miscellaneous Info function, entities can pass along data to other parties that *isare* not directly supported by the data model. For example, when initiating a curtailment request, an entity could provide various other information components, such as:

IMPACTED FLOWGATE : 1178

PROCEDURE : LLR

It is intended that entities make use of this feature in a standard, published manner that will allow recipients to process and utilize the information transferred.

## 7.2.2 Errors and Error Lists

The following are errors that may be supplied by the recipient of a method call should an error condition exist. The responder must provide an error number and a textual description of the error that provides specific detail about the error (i.e., information that will help the user resolve the problem). Supported errors are:

0001	Tag Already Exists	The e-Tag ID provided has already been used on an e-Tag held by the responding service.
0002	Tag Not Found	The e-Tag ID referenced is one not held by the responding service.
0003	Segment Not Found	The Segment referenced is not one held by the responding service
0004	Request Not Finalized	The profile cannot be changed, as it has not yet been finalized.
0005	Request Finalized	The e-Tag cannot be corrected or withdrawn, as it has already been finalized (CONFIRMED, IMPLEMENTED, etc.)
0006	Request Not Found	The referenced request is not one held by the responding service
0007	Stale Request	The request is inappropriate due to timing requirements.
0008	Invalid Range	The range specified exceeds or otherwise

		violates the rules associated with its definition
0009	Invalid Security Key	The <del>security key</del> <u>Security Key</u> provided is not correct
0010	Tag Not Requested	The e-Tag being presented is not one requested by the responding service
0011	Insufficient Rights	The requester does not have appropriate rights
0012	Contact Not Specified	A contact is required to be specified, and was not provided
0013	Reason Not Specified	A Reason is required to be specified, and was not provided
0014	Invalid Return Rate	The Return Rate was either not specified or incorrectly formatted
0015	Correction not allowed	The proposed correction would change the physical or financial path, which is not allowed.
0016	Missing Correction	The SetState request cannot complete because the Approver does not have the most recent correction for the segments in their scope.
0017	Missing DC Tie Operator	The RequestNewTag method cannot complete because a Balancing Authority registered to operate a requested DC Tie was not included as a Scheduling Entity for the Transmission Service Provider in the e-Tag.
0018	Orphan Profile	Every Profile must be reference by at least one Physical Segment
0019	Profile Not Found	The profile being referenced was not found in the e-Tag
0020	Invalid Path Order	The Market Segments, Physical Segments, and Parent market Segment References must be in correct order.
0021	Invalid Registered Value	A registered value is incorrect. This includes invalid or incorrect to/from entities, deactivated or unregistered PORs/PODs and/or Sources/Sinks, and non-existent products.

## 7.2.3 Initiating a Request

### 7.2.3.1 Special Data Structures

#### 7.2.3.1.1 TimeClassification

Used to indicate to an e-Tag Author that a request was received ~~on~~ On-time, Late, or ATF based on the timing tables in the NERC/NAESB Standards ~~timing guidelines~~.

### 7.2.3.2 Request New Tag

Issued by: ~~Agents~~ Agent Services

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to submit a new e-Tag to the Authority Service for processing.

In	Message Info	Required
	Tag	Required
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0001 Tag ID Already Exists	
	0007 Stale Request	
	0017 Missing DC Tie Operator	
	0018 Orphan Profile	
	0020 Invalid Path Order	
	0021 Invalid Registered Value	

### 7.2.3.3 Request Correction

Issued by: ~~Agents~~ Agent Services

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to submit changes to a new e-Tag while it is being evaluated ~~for~~ approval by Approval Entities

In	Message Info	Required
	ContactInfo	Required
	Tag ID	Required
	Correction List	Required
	Notes	Optional
Out (successful)	Return State	
	Correction ID Set	
Errors	0002 e-Tag ID Not Found	
	0003 Segment Not Found	
	0005 Request already in Final state	
	0009 Invalid Security Key	
	0015 Correction Not Allowed	
	0021 Invalid Registered Value	

### 7.2.3.4 Request Profile Change

Issued by: ~~Agents~~, ~~Approvals~~, ~~RASs~~, Approval, RA Services

Processed by: ~~Authorities~~ Authority Services

Purpose: Used to change the energy level or transmission allocation associated with a particular e-Tag.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Market Profile Change OR Reliability Profile Change	Required
	Miscellaneous Info List	Optional
	Notes	Optional
Out (successful)	Return State	
	Request ID	
	Late Flag	
Errors	0002 e-Tag not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not Specified	
	0013 Reason not Specified	
	0019 Profile Not Found	
	0021 Invalid Registered Value	

## 7.2.4 Request Distribution

### 7.2.4.1 Special Data Structures

#### 7.2.4.1.1 Approval Rights Flag

Used to indicate that a recipient of a request distribution has approval rights over the request.

#### 7.2.4.1.2 Impact Flag

Used to indicate that a recipient of a correction request distribution has a need to re-evaluate the e-Tag based on the correction.

### 7.2.4.2 Distribute New e-Tag

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute ~~new~~ New e-Tag ~~requests~~ Requests to parties with rights to view or approve the request.

In	Message Info	Required
	Tag	Required
	Approval Rights	Required
	Late	Optional
Out (successful)	Return State	
Errors	0001 e-Tag already exists	
	0021 Invalid Registered Value	

### 7.2.4.3 Distribute Correction

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute a correction to parties with rights to view or approve the original ~~new~~ New e-Tag ~~request~~ Request.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Correction List	Optional
	Loss Accounting List	Optional
	Impact Flag	Required
	Late Flag	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0003 Segment Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.4.4 Distribute Profile Change

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to distribute a request to change a profile to the parties with rights to view or approve the original ~~new~~ New e-Tag ~~request~~ Request.

In	Message Info	Required
	Contact info	Required
	Tag ID	Required
	Approval Rights	Required
	Request ID	Required
	Requestor	Required
	Late	Required
	Exception Profile Change	Optional
	Transmission Allocation Change List	Optional
	Loss Accounting Change List	Optional
	Misc Info list	Optional
	Notes	Optional
	Request Time Stamp	Required
Out (successful)	Return State	

Errors	0002 e-Tag Not Found
	0009 Invalid Security Key
	0021 Invalid Registered Value

## 7.2.5 Request Actions

### 7.2.5.1 Set State

Issued by: ~~Approvals~~ Approval Services

Processed by: ~~Authorities~~ Authority Services

**Purpose:** Used by entities with Approval Rights to a request to specify their commitment to implement or reject the request.

In	Message Info	Required
	Tag ID	Required
	Scope	Required
	Request Ref	Required
	Approval Status	Required
	Approval Time Stamp	
	Notes	Optional*
Out (successful)	ReturnState	
Errors	0002 e-Tag Not Found	
	0003 Segment not Found	
	0005 Request Finalized	
	0009 Invalid Security Key	
	0013 Reason not Specified	
	0016 Missing Correction	
	0021 Invalid Registered Value	

\*Required for states of Denied or Study.

### 7.2.5.2 Withdraw Request

Issued by: ~~Agents, Approvals, Approval,~~ and ~~RASs~~ RA Services

Processed by: ~~Authorities~~ Authority Services

**Purpose:** Used by request authors to remove their request from consideration prior to the completion of its evaluation.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	

	0005 Request Finalized
	0006 Request not found
	0009 Invalid Security Key
	0011 Insufficient Rights
	0012 Contact not specified
	0021 Invalid Registered Value

### 7.2.5.3 Terminate Request

Issued by: ~~Agents, Approvals~~ Agent and Approval Services

Processed by: ~~Authorities~~ Authority Services

**Purpose:** Used by request authors to set the transmission and energy profiles of an e-Tag to zero and set its state to TERMINATED after the request has transitioned to IMPLEMENTED. The Composite State of the e-Tag changes from IMPLEMENTED to TERMINATED once the current time is less than or equal to the termination time.

In	Message Info	Required
	Contact Info	Required
	Tag ID	Required
	Request Ref	Required
	DateTime	Required
	Notes	Optional
Out (successful)	Return State	
Errors	0002 e-Tag not found	
	0005 Request Finalized	
	0006 Request not found	
	0007 Stale Request	
	0009 Invalid Security Key	
	0011 Insufficient Rights	
	0012 Contact not specified	
	0021 Invalid Registered Value	

### 7.2.6 Information Distribution

#### 7.2.6.1 Distribute Status

Issued by: ~~Authorities~~ Authority Services

Processed by: ~~Agents, Approvals, Approval,~~ and ~~RASs~~ RA Services

**Purpose:** Used to notify entities with Approval and Viewing rights of other Approver's actions with regard to a particular request.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required

	Status List	Required
	Flowgate List	Optional*
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.2 *Distribute Resolution*

**Issued by:** ~~Authorities~~ Authority Services

**Processed by:** ~~Agents, Approvals, RASs, Approval, RA Services~~

**Purpose:** Used to notify entities with Approval and Viewing rights of the final resolution of a particular request.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
	Request Status	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0006 Request not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.6.3 *Distribute Potential TLR Profile Change*

**Issued by:** ~~RASs~~ RA Services

**Processed by:** ~~Agents~~ Agent Services

**Purpose:** Used to inform e-Tag Authors about potential impending profile changes due to TLR.

In	Message Info	Required
	Start Date Time	Required
	TLR Event Ref	Required
	Misc Info list	Optional
	TLR Profile Change List	Required
Out (successful)	Return State	
Errors	0021 Invalid Registered Value	

### 7.2.6.4 *Callback Potential TLR Profile Change*

**Issued by:** ~~Agents~~ Agent Services

**Processed by:** ~~RASs~~ RA Services

In	Message Info	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

## 7.2.7 Query Functions

### 7.2.7.1 Query Summaries

**Issued by:** Agents, Approvals, RASs, Approval, RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to request a list of e-Tags and keys based on search criteria. Primarily used for recovery purposes.

In	Message Info	Required
	Range	Required
Out (successful)	Request ID	
Errors	0008 Invalid Range	
	0021 Invalid Registered Value	

### 7.2.7.2 Callback Summaries

**Issued by:** Authorities Authority Services

**Processed by:** Agents, Approvals, RASs, Approval, RA Services

**Purpose:** Used to send a list of e-Tags and keys to an entity that has previously requested via QuerySummaries.

In	Message Info	Required
	Tag Summary List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.3 Query e-Tag

**Issued by:** Agents, Approvals Agent Services, Approval, and RASs RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to retrieve a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
----	--------------	----------

	Tag ID	Required
Out (successful)	Return State	
	Tag	
Errors	0002 e-Tag not found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

#### 7.2.7.4 Query e-Tags

**Issued by:** Agents, Approvals, RASs, Approval, RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to request multiple e-Tags from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag Credential List	Required
	Return Rate	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0014 Invalid Return Rate	
	0021 Invalid Registered Value	

#### 7.2.7.5 Callback e-Tags

**Issued by:** Authorities Authority Services

**Processed by:** Agents, Approvals, RASs, Approval, RA Services

**Purpose:** Used to send multiple e-Tags from an Authority Service to an entity that requested them via QueryTags. Primarily used for recovery purposes.

In	Message Info	Required
	Tag List OR Empty Element	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0010 e-Tag Not Requested	
	0021 Invalid Registered Value	

#### 7.2.7.6 Query History

**Issued by:** Agents, Approvals, RASs, Approval, RA Services

**Processed by:** Authorities Authority Services

**Purpose:** Used to retrieve a single e-Tag's History from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
Out (successful)	Return State	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.7 **Callback History**

**Issued by:** ~~Authorities~~ Authority Services

**Processed by:** ~~Agents, Approvals, RASs,~~ Approval, RA Services

**Purpose:** Used to send a single e-Tag's History from an Authority Service to an entity that requested it via QueryHistory. Primarily used for recovery purposes.

In	Message Info	Required
	History	Required
Out (successful)	Return State	
Errors	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.8 **Query Request**

**Issued by:** ~~Agents, Approvals, RASs~~

Agent Service, Approval, RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a specific request for a single from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request ID	Required
Out (successful)	Return State	
	RequestProfileChange	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.9 Query Request IDs

**Issued by:** ~~Agents~~ Agent Service, Approvals, ~~RASs~~ RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a list of requests made regarding a single e-Tag from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Status(es)	Optional
Out (successful)	Return State	
	Request ID Summary List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.10 Query Status

**Issued by:** ~~Agents, Approvals, RASs~~ Approval, RA Services

**Processed by:** ~~Authorities~~ Authority Services

**Purpose:** Used to retrieve a request's State from an Authority Service. Primarily used for recovery purposes.

In	Message Info	Required
	Tag ID	Required
	Request Ref	Required
Out (successful)	Return State	
	Request State	
	Approver State List	
Errors	0002 e-Tag Not Found	
	0009 Invalid Security Key	
	0021 Invalid Registered Value	

### 7.2.7.11 QueryAvailability

**Issued by:** ~~Agents, Approvals~~ Agent and Approval Services

**Processed by:** ~~Agents, Approvals, and Authorities~~ Approval, and Authority Services

**Purpose:** Used to determine availability/status of an e-Tagging service. Primarily used to evaluate system performance.

In	From Entity	Required
----	-------------	----------

	To Entity	Required
Out (successful)	Return Time Stamp	
	Request Value	
Errors	0021 Invalid Registered Value	

## **Section 8 - Implementation Requirements**

### **8.1 Notifications**

#### **8.1.1 Modifications Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services that it is anticipated will have an impact on interoperability must coordinate the implementation with the NERC/NAESB subcommittee or working group responsible for the e-Tag specifications. NERC/NAESB will require structured interoperability testing for any changes impacting interoperability prior to implementation.

#### **8.1.2 Modifications Not Impacting Interoperability**

Any e-Tag service provider implementing one or more modifications to any of the e-Tag services must send notification to the appropriate list server(s) 1 business day prior to implementation. In the event of a critical bug correction, this requirement is waived.

### **8.2 E-Tag System Enhancement Process**

#### **8.2.1 Change Drivers**

Changes and enhancements to the e-Tag system are generated through both industry driven efforts and by individual entities (e-Tag vendors and e-Tag system users). Industry driven changes include (1) mandated changes from NAESB business practices, NERC standards, or FERC orders; (2) enhancement requests from any e-Tag system vendor or user; (3) corrections and clarifications by NERC/NAESB or (4) modifications to reflect changes in the industry (such as the creation of the functional model).

#### **8.2.2 Creation of the Revised Specification and/or Schema**

Modifications are typically bundled into a single e-Tag revision. The JESS reviews the modification requests and integrates them into the specification and/or schema if possible. The modified specification and/or schema are then posted for comment by the industry participants and comments are addressed by the JESS. The JESS's responses are subsequently posted. This process circles until the JESS has addressed all comments and concerns. The JESS then submits the revised e-Tag specifications to the NERC IS for review and discussion. The JESS then works with the vendors to prepare final specification revisions and XSD revisions in order to take advantage of any existing infrastructure and ensure that there are no problems created by the revisions. Any comments and concerns are addressed and the final product is sent to the NAESB EC for approval.

### **8.2.3 Interoperability Testing Period**

The JESS also creates structured interoperability test scenarios, structured interoperability test registry data, and interoperability test plans. The JESS also facilitates the structured tests and resolve any disagreements in specification interpretation. The testing period consists of structured interoperability tests that involve all vendors in all service roles that they provide. These tests continue until all vendors pass the tests (or as mutually agreed). Test participants are also required to make their test systems available for other participants to utilize for development and testing. The JESS may also schedule additional testing in order to minimize risk and maximize the probability of success. Subsequent to successful completion of all tests, the industry is given one month at a minimum to deploy modified software in preparation for implementation.

### **8.2.4 Implementation**

The JESS, working with the vendors, creates an implementation schedule and plan. This plan includes all steps necessary to transition between the old version of e-Tag and new version of e-Tag. This plan is also submitted to the industry for comment and comments are acted on and responded to. Finally, JESS coordinates continent wide implementation and facilitates resolution of any problems.

## Appendix A Special Interconnection Implementation Requirements

### Introduction

This appendix contains information that the e-Tag vendors need to know in order to correctly implement the e-Tag services. The regional (RRO) details that impact interoperability or require additional functionality or validation by the Authority Service should be included in this appendix.

If these do not impact interoperability or require implementation of specific features by the Authority Service then they need not be included in this appendix. Instead these may be accessed from the NAESB web site (modify this when the URL is provided).

### WECC Interconnection

#### Introduction

WECC business standards require some additional features to the standard tagging implementation. The sections below describe the additional requirements for parties providing tagging services to WECC members. These additional requirements are mandatory for all Agent, Approval, and Authority Services used in the western interconnection, and optional for services used by other interconnections.

#### INT-BPS-009

INT-BPS-0009 applies to all tags of transaction\_type = "Capacity" that contain a sink point associated with the WECC region.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must only use energy product C-SP or C-NS.
- Any reliability entity (BA or Transmission Service Provider) may adjust the market-level energy profile. They may not change nor add transmission allocations.
- The Load-Serving-Entity listed on the tag has the same adjustment rights as the tag author or Creating Purchasing-Selling-Entity (CPSE) (can adjust energy or transmission or both).
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag's Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag

changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.

### INT-BPS-011

INT-BPS-011 applies to all tags of transaction type = “Recallable” that contain both a source and a sink point associated with the WECC region. Note that the version of INT-BPS-011 currently available from WECC references tags of transaction type = Normal. It was subsequently decided that this requirement should be implemented using a new transaction type (referred to as Recallable) instead. References to Normal in the INT-BPS-011 standard should always be interpreted as Recallable.

To support this WECC Business Practice Standard, the following additional tagging requirements apply to all such tags.

- The first market segment (the GPE) must use energy product C-RE.
- A simplified approval process will be used in some cases. Curtailments and market-level adjustments originating from a Tag’s Source BA, Sink BA, or CPSE need only be approved by the Source BA and the Sink BA. No other party will have approval rights for such requests. This shortened process applies only to tag changes. New Tag/correction requests and tag changes issued by parties other than the Source and Sink BAs and CPSE will follow the standard rules for approval parties.
- Default ramp durations will be zero minutes. This applies to New e-Tag Requests and all subsequent requests.

### INT-BPS-014

INT-BPS-014 applies to all tags that both the source and sink points are associated with the WECC region for transaction type = NORMAL.

The following additional tagging requirements apply to all such tags:

- The first market segment (the GPE) must contain MiscInfo with:  
Token = “WECC Reserve Responsible Entity”,  
Value = the name of the entity filling the role of “responsible entity” selected as described in the WECC business practice.
- In the case where the RE is NOT the Source BA, the following must be provided:  
The first market segment must also contain MiscInfo with  
Token = “WECC Reserve Responsible Entity Type”,  
Value = BA or PSE.  
Tags that are required to contain a reserve obligation multiplier must contain MiscInfo (in the first market segment) with

Token = “WECC\_Reserve\_Multiplier”,  
Value = 5, 7, or 100.

- Agent and Authority Services will retain a list of which PSEs are registered with WECC as valid RSG members. This list will be made available for programmatic download via webService or other standard mechanism to be provided by WECC. No validation will be done to support this business practice until the RSG member list is available for download. The list is available at:  
<http://www.wecc.biz/documents/library/ESWG/WECCBP14-PSERE.csv>
- The Business Practice contains additional implementation details.

### **Eastern Interconnection**

No Special Implementation Requirements have been identified.

### **ERCOT**

No Special Implementation Requirements have been identified.

### **Quebec Interconnection**

No Special Implementation Requirements have been identified.



## RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE

**For Quadrant:** WEQ  
**Requesters:** WEQ Joint Electric Scheduling Subcommittee  
**Request No.:** WEQ 2009 AP Item (1.a) R05020;  
WEQ 2009 AP Item (3.a.vii)  
**Request Title:** Modifications to WEQ-004 Coordinate Interchange

### 1. RECOMMENDED ACTION:

Accept as requested  
 Accept as modified below  
 Decline

### EFFECT OF EC VOTE TO ACCEPT RECOMMENDED ACTION:

Change to Existing Practice  
 Status Quo

### 2. TYPE OF DEVELOPMENT/MAINTENANCE

#### Per Request:

Initiation  
 Modification  
 Interpretation  
 Withdrawal  
  
 Principle  
 Definition  
 Business Practice Standard  
 Document  
 Data Element  
 Code Value  
 X12 Implementation Guide  
 Business Process Documentation

#### Per Recommendation:

Initiation  
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 Principle  
 Definition  
 Business Practice Standard  
 Document  
 Data Element  
 Code Value  
 X12 Implementation Guide  
 Business Process Documentation

### 3. RECOMMENDATION

#### SUMMARY:

The Coordinate Interchange (WEQ-004) is being modified to address the following WEQ 2009 Annual Plan items:

- 1.a Develop business practices to support Coordinate Interchange – [R05020](#) “Include a guideline for rounding schedules with partial MWh’s in the coordinate interchange business practice WEQ BPS-002-000” the rounding standard recommendation
- 3.a. vii Review and correct the WEQ-004 Coordinate interchange Business Practice Standard as noted during the development of the e-Tag 1.8 development process.

These changes are being done in conjunction with updating the Electronic Tagging Functional Specification, from Version 1.8.0 to Version 1.8.1. In addition to making changes to WEQ-004, conforming changes need to be made to other WEQ Business Practice standards which reference the Electronic Tagging Functional Specification.

September 2, 2009



## RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE

**For Quadrant:** WEQ  
**Requesters:** WEQ Joint Electric Scheduling Subcommittee  
**Request No.:** WEQ 2009 AP Item (1.a) R05020;  
WEQ 2009 AP Item (3.a.vii)  
**Request Title:** Modifications to WEQ-004 Coordinate Interchange

### RECOMMENDED STANDARDS:

**NOTE:** The changes to WEQ-004 and the definitions are documented in a separate attachment.

#### Changes to WEQ-001

001-10.8 TPs shall have the right, but are in no means obligated, to accept requests for Redirect on a Non-Firm basis based on the submission of an Electronic Tag (e- Tag) using protocols compliant with Version 1.8.1 Electronic Tagging Functional Specification.

#### Changes to WEQ-002

002-4.2.8.2 Company Information

...

a. Company Code

4 character code for primary transmission providers; 6 character code for eligible customers in accordance with Version 1.8.1 Electronic Tagging Functional Specification requirements shall be maintained for each Company.

...

#### Changes to WEQ-003

Change Definition of Data Element for SCHEDULE\_PRIORITY as redlined below:

Identifies the relative priority of this particular interchange transaction as compared to all other scheduled transactions with respect to the application of curtailments or interruptions as well as the type of transmission service schedule. SCHEDULE\_PRIORITY would typically reflect the lowest priority (if multiple reservations are used to support the schedule) registered transmission product code used to support the schedule on the Transmission Provider's system. Transmission product codes are registered values established by the Version 1.8.1 Electronic Tagging Functional Specification. If the schedule is not associated with an electronic tag, this should represent the NERC\_CURTAILMENT\_PRIORITY or OTHER\_CURTAILMENT\_PRIORITY associated with the transmission service scheduled.

Change Definition of Data Element for TRANSCATION\_ID as redlined below:

Identifier associated with an interchange transaction that may span multiple SCHEDULE\_REF records. May be the NERC Tag id as specified in the Version 1.8.1 Electronic Tagging Functional Specification.

Change Definition of Data Element for TRANSCATION\_TYPE as redlined below:

Registered transaction type identifier as specified in the Version 1.8.1 Electronic Tagging Functional Specification. If the transaction is not based on an electronic tag, this may take on any appropriate value established by the Transmission Provider.

#### Changes to WEQ-013

013-3.2 *scheduledetail*

The *scheduledetail* template shall be used to query specific information posted by the Primary Provider related to the scheduled usage of reserved transmission service.



## RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE

**For Quadrant:** WEQ  
**Requesters:** WEQ Joint Electric Scheduling Subcommittee  
**Request No.:** WEQ 2009 AP Item (1.a) R05020;  
WEQ 2009 AP Item (3.a.vii)  
**Request Title:** Modifications to WEQ-004 Coordinate Interchange

For (transmission) schedules derived from implemented electronic tags (e-Tags) submitted in accordance with the Version 1.8.1 Electronic Tagging Functional Specification the following information must be provided on OASIS.

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### 4. SUPPORTING DOCUMENTATION

#### a. Description of Request:

Modify the WEQ-004 Coordinate Interchange Business Practice to address WEQ Annual Plan Items:

- 1.a Develop business practices to support Coordinate Interchange – [R05020](#) “Include a guideline for rounding schedules with partial MWh’s in the coordinate interchange business practice WEQ BPS-002-000” the rounding standard recommendation
- 3.a. vii Review and correct the WEQ-004 Coordinate interchange Business Practice Standard as noted during the development of the e-Tag 1.8 development process.

#### b. Description of Recommendation:

Modify WEQ-004 Coordinate Interchange to support the Version 1.8.1 Electronic Tagging Functional Specification.

#### c. Business Purpose:

To address standards Recommendation R05020 and ensure WEQ-004 Coordinate Interchange is consistent with the Version 1.8.1 Electronic Tagging Functional Specification, which has been transferred from NERC to NAESB.

#### d. Commentary/Rationale of Subcommittee(s)/Task Force(s):

WEQ Executive Committee Meeting Minutes/Documents

- February 3, 2009 Meeting Minutes [http://www.naesb.org/pdf4/weq\\_ec020309fm.doc](http://www.naesb.org/pdf4/weq_ec020309fm.doc)
- February 3, 2009 JISWG Recommendation to the Executive Committee on transition of Electronic Tagging Functional Specification [http://www.naesb.org/pdf4/weq\\_jiswg011409a1.doc](http://www.naesb.org/pdf4/weq_jiswg011409a1.doc)

WEQ JISWG/JESS Meeting Minutes

- October 20, 2009
- September 1-2, 2009
- July 15-16, 2009 [http://www.naesb.org/pdf4/weq\\_jess071509fm.doc](http://www.naesb.org/pdf4/weq_jess071509fm.doc)
- May 13-14, 2009

Standards Request R05020

- <http://www.naesb.org/pdf2/r05020.doc>

Assumptions

September 2, 2009



**RECOMMENDATION TO NAESB EXECUTIVE COMMITTEE**

**For Quadrant:** WEQ  
**Requesters:** WEQ Joint Electric Scheduling Subcommittee  
**Request No.:** WEQ 2009 AP Item (1.a) R05020;  
WEQ 2009 AP Item (3.a.vii)  
**Request Title:** Modifications to WEQ-004 Coordinate Interchange

- The JESS has removed the Definitions section from the WEQ-004 Coordinate Interchange Business Practices under the assumption that all definitions will be moved to WEQ-000 per the WEQ 2009 Annual Plan Item 5.b Modify NAESB definitions to address internal inconsistencies and inconsistencies with the NERC glossary. Revise existing NAESB glossary/definition of terms to be applicable to entire set of WEQ Business Practices.  
([http://www.naesb.org/pdf3/weq\\_ec051308w3.doc](http://www.naesb.org/pdf3/weq_ec051308w3.doc))
- The Version 1.8.1 Electronic Tagging Functional Specification will be implemented by the end of 2009.

DRAFT

## WEQ-000 Acronyms and Definitions

TERM	DEFINITION
Straddle Ramp	Ramp that divides the start ramp duration equally across the profile block start or end time.

## WEQ-004 Coordinate Interchange

### Introduction

Coordinate Interchange standards establish the Interchange Transaction requirements for coordination of the commercial arrangements and to complement the NERC reliability standards.

### Applicability

The Coordinate Interchange business practice standards are applicable to Balancing Authority (BA), Reliability Coordinator (RC), Interchange Authority (IA), Transmission Service Provider (TSP), Purchasing-Selling Entity (PSE), Generator-Provider Entity (GPE), Load-Serving Entity (LSE), and any Transmission Purchasing-Selling Entity (TPSE).

### Definition of Terms - Reserved

### Business Practice Requirements

- 004-1** All requests to implement bilateral Interchange (excluding Interchange for emergency energy) between a Source Balancing Authority and a Sink Balancing Authority, where one or both Balancing Authorities are located in either the Eastern or Western Interconnection, shall be accomplished by the submission of a completed and accurate Request For Interchange (RFI).
- 004-1.1** To the extent that Intra BA transactions are submitted as a Request for Interchange (RFI), those transactions will be subject to all provisions of this standard.
- 004-1.2** RESERVED
- 004-1.3** RESERVED
- 004-1.4** RESERVED
- 004-1.5** RESERVED
- 004-1.6** RESERVED

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- 004-2** Until other means are adopted by NAESB, the primary method of submitting the Request For Interchange (RFI) shall be the e-Tag and in accordance with the Version 1.8.1 *Electronic Tagging Functional Specification*.
- 004-2.1** A backup or redundant electronic system shall be available for immediate use should the primary electronic means become disabled as documented in Appendix A “Electronic Tagging Service Performance Requirements and Failure Procedures”.
- 004-2.2** RESERVED
- 004-3** Arranged Interchange that crosses Interconnection Boundaries (Eastern, Western, HQ (TransEnergie) or ERCOT) shall be subject to the submittal and approval timing requirements associated with the most restrictive interconnection involved in the Interchange.
- 004-3.1** For Interchange where the sink is in the Western Interconnection for same day transactions, the last Purchasing-Selling Entity before the DC Tie in the Eastern Interconnection shall be responsible for submitting the e-Tag.
- 004-4** RESERVED
- 004-4.1** RESERVED
- 004-4.2** RESERVED
- 004-5** It shall be the responsibility of the LSE, or its designee, to ensure the completed and accurate RFI contains, at a minimum, the information specified in Appendix C “Data Submission and Modifications”.
- 004-6** Approval Entities shall only be allowed to take actions against an Arranged Interchange as specified in Appendix B “Transaction e-Tag Actions”.
- 004-6.1** Prior to the expiration of the market assessment period defined in the Appendix D, “Commercial Timing Tables”, Column B, the TPSE, LSE, and GPE may respond to a request from the Interchange Authority to transition an Arranged Interchange to a Confirmed Interchange.
- 004-6.1.1** Each TPSE, LSE, and GPE shall assess the Arranged Interchange for completeness and accuracy of the information contained in the Arranged Interchange.
- 004-6.1.2** If the TPSE, LSE, or GPE does not respond to an RFI, the Arranged Interchange is considered passively approved by that entity.
- 004-6.1.3** If the TPSE, LSE, or GPE is also the PSE creating the e-Tag, Arranged Interchange will be considered approved by that entity.
- 004-6.2** RESERVED
- 004-7** RESERVED

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- 004-7.1** RESERVED
- 004-8** The complete and accurate RFI, or modified Arranged Interchange submitted to the Interchange Authority shall be subject to the timing requirements contained in this standard under Appendix D “Commercial Timing Table.”
- 004-8.1** RESERVED
- 004-8.2** RESERVED
- 004-8.3** RESERVED
- 004-9** All denials of Arranged Interchange by an Approval Entity during the assessment period (reliability and market) shall be accompanied by the reason for such denial and communicated to the Interchange Authority and by the Interchange Authority to the Requesting PSE.
- 004-10** Any changes to the status of the Arranged, Confirmed, or Implemented Interchange shall be communicated by the Interchange Authority to all involved parties listed on the e-Tag.
- 004-11** The Requesting PSE shall have the right to request modifications to the Arranged, Confirmed or Implemented Interchange for non-reliability related issues according to the timing requirements in Appendix D “Commercial Timing Table”.
- 004-11.1** The Requesting PSE can request to increase or decrease the energy level or the committed transmission(s) profile of an Arranged, Confirmed or Implemented Interchange.
- 004-11.2** The Requesting PSE shall have the right to request an extension to the Arranged, Confirmed or Implemented Interchange energy profile prior to completion to reflect a desire to flow energy during hours not previously specified.
- 004-11.2.1** RESERVED
- 004-11.3** If the modification is denied by any Approval Entity, the previous Confirmed or Implemented Interchange remains valid, including the duration period.
- 004-11.4** The Requesting PSE shall submit a transmission capacity profile that is greater than or equal to the energy profile.
- 004-12** All parties involved in the Arranged Interchange shall have, or arrange to have, resources available to process notification of changes to the Arranged Interchange from the beginning of the Market Period through the time when the energy flow of the Implemented Interchange has been completed.
- 004-13** Unless provided for under a FERC-approved market mechanism, energy accounting for all Interchange Transactions shall be accomplished via Interchange Block Accounting.

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**004-14** Settlement of losses shall be designated as financial or as payment in-kind in accordance with the Transmission Service Provider tariff and posted business practices.

**004-14.1** For losses designated as payment in-kind, returned concurrently the requesting PSE shall designate in the RFI the amount of MW losses and the entity that should receive them along the Interchange path.

**004-15** All Reliability Coordinators, Balancing Authorities, Transmission Service Providers, Generator-Providing Entity, Load-Serving Entity, and other entities involved in an Interchange request shall not disclose the Interchange Transaction information to any entity not involved in the Interchange Transaction.

**004-16** RESERVED

**004-17** All ramps shall be Straddle Ramps. Instantaneous ramps are indicated by a zero minute ramp duration. Ramp durations are specified in minutes. The ramp start is calculated by dividing the ramp duration by two and subtracting this quantity from the profile block start time. The ramp end time is calculated by dividing the ramp duration by two and adding this quantity to the profile block start time. The final profile block implies a ramp down to zero starting at one-half the end ramp duration subtracted from block end time and continuing to one-half the end ramp duration added to the block end time. The ramp start and stop times represent minutes over which generation will increase or decrease from the previous block level to the current block level.

Ramp durations of any value may be specified in a RFI and must be agreed to by all parties with approval rights involved in the RFI.

If no ramp duration is included on the e-Tag for the North American Interconnections the default ramp duration shall be as follows:

**004-17.1** Default ramp duration for the Eastern Interconnection shall be 10 minutes.

**004-17.2** Default ramp duration for the Western Interconnection shall be 20 minutes.

**004-17.3** The default ramp that crosses the Eastern and Western Interconnections shall be 20 minutes.

**Coordinate Interchange for Capacity Benefit Margin**

004-18 All scheduled use of a Transmission Service Provider's transmission capacity set-aside for Capacity Benefit Margin (CBM) in support of energy imports into a load Balancing Authority served by the Transmission Service Provider shall be uniquely represented in all RFI submitted to the IA.

004-18.1 Until other means for submitting the RFI are adopted by NAESB, the following data fields shall be specified in each e-Tag requesting the use of the Transmission Service Provider's CBM:

- The e-Tag transaction type shall be EMERGENCY

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- The Transmission PSE (TPSE) listed in the physical segment where CBM is being requested shall be the registered Entity Code of the Load Serving Entity requesting use of CBM. Note that this is not necessarily the PSE submitting the e-Tag.
- The Transmission Product associated with the Transmission Service Provider whose use of CBM is being requested shall be 7-CB

004-18.2 The Transmission Service Provider may require the specification of a unique Transmission Reservation Number in association with any request for use of CBM. Such requirement shall be fully documented in the Transmission Service Provider's Business Practices posted on OASIS. The Transmission Service Provider reserves the right to deny any RFI requesting use of CBM if the required Transmission Reservation Number is not specified.

004-19 MW values specified in Interchange Transactions must be integrated into MWh values across various time intervals. Interchange Transactions that start or stop within an hour may result in fractional MWh values being calculated for the period. Additionally, these values may be used to calculate totals for longer periods (such as a portion of a day, whole day, week, month, etc). These total numbers may vary depending on the method used to perform the calculation. In order to ensure consistent treatment across the industry where whole MWh values are used, the following calculation guidelines shall be followed:

004-19.1 For time periods of an hour or less, MWh values shall be rounded to the nearest whole MWh (< .50 down, >= .50 up) for each time interval.

004-19.2 For time periods of an hour or more (e.g. a day, a week, the off-peak hours for a day, etc.), calculate and round the MWh values for each individual hour within the time period, then sum the hourly results to get the MWh value for the whole time period.

## **004-A Appendix A – Electronic Tagging Service Performance Requirements and Failure Procedures**

This appendix describes the performance requirements of the e-Tag system and the procedures to be followed in the event of an e-Tag system component's failure. Due to the importance of accurate information flow, these procedures and requirements have been developed to ensure that reliable data communications remain available at all times.

### **A. Performance Requirements**

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#### ***e-Tag Agent Service***

Entities that are required to use e-Tag Agent Services are responsible for obtaining an e-Tag Agent Service in order to conduct business; there are no exemptions to this requirement. There is no specific requirement against which performance should be measured. However, in cases of e-Tag Agent Service failure, non-receipt of critical information (such as curtailment notifications, transaction denials, and schedule modifications) due to performance problems shall be the responsibility of the e-Tag Agent Service user.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the e-Tag Agent Service user is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

#### ***e-Tag Approval Service***

Entities that are required to employ e-Tag Approval Services are responsible for providing an e-Tag Approval Service as well as providing a level of redundancy; there are no exemptions from this requirement. At a minimum, e-Tag Approval Services may not have greater than 1.0% of the e-Tags sent to their system within a calendar month be determined by the e-Tag Authority Service as having a state of "COMM\_FAIL." While there is no specific level of redundancy that is required by this appendix, sufficient redundancy must be in place that the entity is confident of achieving this standard.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the entity required to employ the e-Tag Approval Service is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

In order to monitor compliance with this requirement, the Balancing Authorities will arrange with their e-Tag Authority Services to generate compliance reports at the beginning of each month determining this metric for the previous month. These reports shall be available for five years.

#### ***e-Tag Authority Service***

As the e-Tag Authority Service is the most critical element of the e-Tag system, it must meet much higher standards.

The following shall be required of all e-Tag Authority Services:

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- All scheduled outages should be performed between the hours of 01:00 CST and 04:00 CST. Any maintenance that must be performed outside this three hour window must be accomplished through the use of redundant systems in such a manner that no outage is visible;
- Notice of scheduled outages must be given to the public by the e-Tag Authority Service or designated third party via email or via a proprietary system, time stamped at least 24 hours prior to the outage.
- e-Tag Authority Services shall not be in a state of scheduled or unscheduled outage for more than 0.5% of the time for the month, based on outage time (in minutes) for the month divided by total time in the month (in minutes).

Any system problem that creates behavior contrary to that described in the Version 1.8.1 Electronic Tagging Functional Specification shall constitute an unscheduled outage. For example, a system that begins rejecting every third message it receives due to a component failure in a cluster would constitute an unscheduled outage.

While it is acceptable for an entity to contract with a third-party to provide for these requirements, it should be understood that the entity required to employ the E-Tag Authority Service is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

To monitor compliance with these requirements, Balancing Authority will require its e-Tag Authority Service to submit, at the beginning of each month, a report describing outage activity for the previous month. This report shall consist of the following items:

1. The beginning of the outage;
2. The ending of the outage;
3. The type of outage (Scheduled or Unscheduled);
4. The nature of the outage (Maintenance, System Crash, etc...);
5. In the event of an Unscheduled Outage, the cause of the outage and the steps taken to ensure the problem has been addressed and will not reoccur.

These reports shall be available for five years.

## **B. Failure Procedures**

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Backup procedures are needed because, in a communication system that operates on the public Internet, failures are certain to occur. The failures may be caused as a result of overload of the network, loss of connection to an Internet service provider, corruption of one or more servers by computer hackers, failure of one or more entity's Internet servers, internal firewall failure, and many other reasons.

Failures also have a wide variety of scopes. A failure may affect a single entity with a small number of schedules while all of its neighbors continue to operate normally, a small number of utilities in a local area, or a regional RTO with thousands of active schedules. However failures occur, the operation of the

electric utility grid must continue. This document describes the manner in which operations are to be coordinated should such a failure become a reality.

### ***Assumptions***

A general assumption is that each operational entity in the electric utility industry has an internal energy management system, marketing system, or contract system that will not be affected by the Internet communication failure.

### ***Participating Entities***

**Requesting PSE** - The entity that prepares and submits an RFI, normally a Purchasing Selling Entity.

**Path Participant** – Any of the entities that are part of an Interchange transaction.

**E-Tag Authority Service Entity** – The entity that provides the Interchange Authority service for an e-Tag. The E-Tag Authority service itself is typically a computer system that maintains the master database for the tag and communicates status with other computer systems. The E-Tag Authority Service Entity is the utility industry entity that is responsible for providing the service. In e-Tag 1.8, this entity is the Sink Balancing Authority.

**Approval Entity** – An entity that has approval rights for Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE) and the Load-Serving Entity (LSE) involved in the Arranged Interchange

**Checkout Partners** – The entities that perform the checkout process. Most commonly two adjacent Balancing Authorities checking net interchange. It might also be two marketers checking sales and purchases, or a transmission customer checking schedules with a transmission provider.

### ***Failure Actions***

When a failure occurs an entity will soon realize that it has lost communications with the other servers in the electronic tagging arena. Yet it must still communicate current energy flows across the transmission network and expected flows for the next few hours. Transmission curtailments must be accounted for in the sense that a required reduction in energy flows or increase in generation needs to be communicated. However, accounting issues will take a secondary priority to reliability issues in this exchange, and detail relating back to tags, schedules, and transmission reservations can be reconstructed later.

### ***E-Tag Authority Failure Actions***

When a failure occurs at the level of E-Tag Authority, the effects will trickle down to not only all of the users of that Authority, but also to any participating entity wishing to submit a RFI with a user of the failed E-Tag Authority. While reliability will be the focus during this time, the following procedures shall be used until functionality returns to the E-Tag Authority.

1. Reliability entities will adhere to all currently Implemented schedules as communicated to them prior to the E-Tag Authority outage. This will continue until the outage ends or to 4-hours from the beginning of the outage, whichever occurs sooner.
2. As the E-Tag Authority service is down, E-Tags will not be created via that service until operation is reinstated. Subsequently, any tags made via a different E-Tag Authority entity will not be able to communicate to the downed entity and

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therefore, no transactions with approval entities that use the downed E-Tag Authority service will be approved.

3. The Interchange Authority will broadcast a message by email and/or electronic messaging systems to all entities within its authority service. The message should forecast a recovery time for the E-Tag service. In the meantime, the E-Tag Authority Service is down.
4. Reliability Coordinators must contact the sink Balancing Authority via phone to communicate changes to schedules due to TLR curtailments, reloads or any other reliability change.
5. The Interchange Authority will communicate any reliability changes to other reliability entities within the E-Tag's physical contract path, including the source Balancing Authority, transmission providers and any applicable scheduling entities.
6. Interconnecting Balancing Authorities will continue to verify Net Scheduled Interchange prior to each operating hour.
7. If 4-hours from the original outage time have passed, Requesting PSEs may submit paper copies of the RFI via FAX to the Interchange Authority, excluding the WECC. For the WECC, the only acceptable mechanism for creating a Request For Interchange is creation of a new e-Tag Request.
8. The Interchange Authority will evaluate the paper RFI and will collect the approvals for all valid requests from each Reliability entity, including the source Balancing Authority, transmission providers and any applicable scheduling entities. The IA will communicate the final approval status to all entities. All entities must approve the transaction before being included in any entity's Net Scheduled Interchange.
9. After the outage is complete, each entity will take steps to ensure proper accounting adherence for all applicable approved transactions.

***Singular Failure Actions***

The table below lists typical failures that might occur and the emergency actions that the entity will take to compensate for that failure.

<b><i>Entity</i></b>	<b><i>Connectivity Problem</i></b>	<b><i>Backup actions</i></b>
Requesting PSE	Unable to submit tag to E-Tag Authority Service.	Ask another entity in the transaction chain to submit the schedule for you. That entity then becomes the author.  For Interconnections, excluding the WECC, create a backup paper copy of the schedule and fax to authority service entity and all approval entities in the transaction. For the WECC, the only acceptable mechanism for creating a Request For Interchange is creation of a new e-Tag Request.
Path Participant	Not receiving update messages.	Use Recovery Process to resynchronize from authority service.  Use telephone with Authority Service Entity to update status.
Interchange Authority Service Entity	Unable to send messages to generation or load Balancing Authorities.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity for these control areas.  Telephone Approval Entity to notify of the message failure.  Approve or deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an Approval Entity for an intermediate Transmission Provider or Balancing Area.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity.  Telephone Approval Entity to notify of the message failure.  Approve the schedule automatically.  Deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an information only entity.	No Action required.

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<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup actions</b>
Approval Entity	Unable to receive messages from an authority service.  (The Authority has an obligation to notify you and the authoring PSE.  The Authoring PSE has an obligation to fax the tag to the approver.)	Use the Recovery Process to resynchronize from Authority Services or Central Repository.  Telephone the Authority Service entity with the approval or denial of the schedule.
Approval Entity	Unable to send messages to an authority service.	Telephone the Interchange Authority Service Entity with approval or denial of the schedule.
Checkout Partner	Unable to exchange messages.	Telephone net exchange to the checkout partner.  Create a backup paper copy of the checkout data and fax to the checkout partner.

Notes:

1. The first action in every case is to attempt to establish connection by using an alternate communication method, a second Internet service provider, dial up connection, or a private network if one is available.
2. Next, the backup actions are attempted in the order specified.
3. The backup actions include printing paper reports from the internal energy management system. The reports include a schedule detail report for a short time period, net exchange between two operational entities, and transmission reservation usage between a transmission provider and a customer.
4. Every backup action list ends with a fax or telephone call that is completely independent of the public Internet.

**Reports**

Three reports have been designed to communicate energy flows and transmission reservation usage between partner entities with a tie where possible back to the schedules as known before the communication failure.

**Net Exchange**

A Net Exchange report is a paper summary of Interchange:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entity and the partner entity are any two entities that share common schedules.

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- The date and time are the date and time of the report.
- Net schedules are the net of schedules from and to the other entity.
- TO is a sum of the schedules from the entity to the partner entity.
- FROM is a sum of the schedules from the partner entity to the entity.
- Tag or fragment lines represent the data from each tag or fragment that was known at the time of the failure or has been entered later.
- Recent adjustment lines represent a summary of changes to the schedules that occurred since the failure.

### ***Schedule Detail***

A Schedule Detail report is a paper copy of an individual schedule. It includes:

- The schedule identification number and most current active revision number.
- The fully expanded energy schedule for a period of the current hour to a few hours in the future, up to 24 hours.
- The complete path with all OASIS and contract references.

### ***Reservation Usage***

A transmission Reservation Usage report is a summary of Reservation Usage:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entities on the report are a transmission provider and a transmission contract holder.
- Gross reservations is the sum of reservations. Usage is the sum of usage.
- The detail lines are tag or fragment usage of reservation, organized by product and OASIS reservation number.

### ***Recovery Process***

The last backup issue is the recovery of current status when the communication link is reestablished. The recovery is accomplished by a query request to the Interchange Authority service for each entity that the entity does business with. The query returns a list of all the schedules that reference that entity with the schedule ID, the current version number and the last modified date and time.

The recovering entity then compares with its own database and updates his database to be current with the Interchange Authority's database. When all Interchange Authority services have been queried, the recovery is complete.

If the entity desires, it can request a complete audit history of each schedule.

## 004-B Appendix B

### Transaction e-Tag Actions

#### *For Eastern and Western Interconnections*

The table below explains the various e-Tag actions that are possible, and the entities that are entitled to initiate these actions:

Desired Policy Action	Reason	Tagging Action	Initiated by	Approval Needed	Result
Approve a Tag Request	Economic, Reliability, or Contractual	Set Status (to Approved)	Approval Entity*	n/a	Approver indicates approval
Deny a Tag Request	Economic, Reliability, or Contractual	Set Status (to Denied)	Approval Entity*	n/a	Approver indicates denial
Study a Tag Request	Economic, Reliability, or Contractual	Set Status (to Studied)	Approval Entity*	n/a	Approver indicates the tag has been viewed, but have not committed to a decision
Withdraw a Tag Request	Economic	Withdraw Request prior to request implementation	Requesting PSE**	no	Request is Withdrawn
Cancel a New Tag	Economic	Request Profile Change – Set Energy and Capacity for the transaction to zero prior to transaction start	Requesting PSE**	yes	Tag is Cancelled
Terminate a Tag	Economic	Request Profile Change – Set Energy and capacity of the transaction to zero from a point of time forward	Requesting PSE**	yes	Portion of tag is Terminated
Extend an e-Tag	Economic	Request Profile Change – Append additional hours onto an existing transaction	Requesting PSE**	yes	Request is approved and the e-Tag is extended
Reduce an e-Tag	Economic	Request Profile Change – Decrease Energy flow or Committed Transmission Reservation(s) for a transaction for a	Requesting PSE**, Market Operator***, Source BA, Sink BA, Transmission Service	yes	Market Level Profile and/or Transmission Allocation Profile is Decreased

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Desired Policy Action	Reason	Tagging Action	Initiated by	Approval Needed	Result
		specific set of hours	Provider, Reliability Coordinator****		
Increase an e-Tag	Economic	Request Profile Change – Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours	Requesting PSE**, Market Operator***	yes	Profile is Increased
Curtail an e-Tag	Reliability (TLR, SOL Violation, Loss of Gen, loss of Load)	Request Profile Change – Limit Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****	yes	Profile is Decreased
Reload an e-Tag	SOL Violation eliminated, Generator Returned, Load Returned	Request Profile Change – Release Limit of Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator	yes	Profile is Increased

Notes:

\*GPEs, LSEs, and TPSEs may elect to defer their approval rights to the Host Balancing Authority of their facilities. For more information, see PSE and LSE approval rights below

\*\*In some situations, Balancing Authorities implement certain Interchange Transactions or Interchange Schedules, such as bilateral inadvertent payback, Dynamic Schedules, and emergency schedules from Reserve Sharing Groups. In these situations, the Balancing Authority serves as the Purchasing-Selling Entity and can perform these actions.

\*\*\*Entities registered as market operators and serving as either source or sink for a Transaction may exercise such functions in order to indicate correct flow based on market clearing.

\*\*\*\*With the addition of Source BA, Sink BA, Transmission Service Provider and Reliability Coordinator to the list of entities available to reduce E-Tag energy and transmission profiles, those entities will use that function for any non-reliability market operations as necessary. The curtailment option will only be used for the reliability reasons as described. The curtailment issuer should include the reason for the action in their request for the profile change.

***PSE and LSE Approval Rights***

Generation Providing Entities (GPE), Load-Serving Entities (LSE), and Transmission Purchasing-Selling Entities (TPSE) have the right, but not the obligation, to approve Transaction requests citing their resources. A GPE (for Sources) or a LSE (for Sinks) can specify an alternate approval entity in the Master Registry. If GPEs and LSEs specify an approval service in the Master Registry, then they are expected to approve/deny Transactions when so requested. Otherwise, their Host Balancing Authority is expected to act on their behalf. The following table illustrates the proper way to interpret this requirement:

<b>If the GPE or LSE...</b>	<b>Specified an alternate Approval Entity</b>	<b>The alternate entity has rights to approve or deny</b>
	<b>Specified an Approval URL</b>	<b>The PSE has rights to approve or deny</b>
	<b>Did not specify an Approval URL</b>	<b>The Host BA should have proxy approval rights for the PSE</b>

## 004-C Appendix C Data Submission and Modifications

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### A. Required and Correctable e-Tag Data for New Interchange Transactions

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A new Interchange transaction is an Arranged Interchange (e-Tag) that has not yet been approved or confirmed for implementation. Such Arranged Interchange must be presented to those Approval Entities (as e-Tag) that are responsible for the implementation of the Interchange transaction in order that they may evaluate the e-Tag and determine whether or not the Interchange can be implemented.

The following information describes what is required and what is correctable in such Request For Interchange (RFI). “Correctable” as used below indicates a field that may be modified by the RFI author prior to a RFI reaching a composite state of CONFIRMED. The lack of this term below indicates that the field is not correctable. “Required” as used below indicates a field must be populated with data in order for the RFI to be considered valid. The lack of this term indicates that the field is not required.

#### 1. Market Information

##### 1.1. RESERVED

1.2. Financial Path (Required) – the description of financially responsible parties for the Interchange in order. This will typically start with a Purchasing-Selling Entity providing generation (GPE) and finish with a Load Serving Entity (LSE), and where applicable, intermediate Purchasing-Selling Entities between the two.

1.2.1. Energy Title Holder(s) (Required) – the identity of the entities financially responsible to take and/or deliver the energy as described in the physical path. This will typically be a Purchasing-Selling Entity providing generation (GPE), a Load Serving Entity (LSE), and where applicable, Intermediate Purchasing-Selling Entities.

1.2.1.1. Energy Product Type (Required) (Correctable) – the type of energy delivered by the Energy Title Holder.

1.2.1.2.

1.2.1.3. Contract Number(s) (Correctable) – reference to a Transaction entered into by the Energy Title Holder with one or more other participants in the Transaction.

1.2.1.4. Miscellaneous Information (Correctable) – information provided at the Requesting PSE’s option regarding the Transaction.

#### 2. Physical Information

2.1. Physical Path (Required) – the description of physically scheduling parties for the Interchange in order and related to the financially responsible parties described above. This will always contain a Generation segment, at least one Transmission segment, and a Load segment.

2.1.1. Generation (Required) – set of data describing the physical and contractual characteristics of the energy source.



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- 2.1.2.8.** Transmission Reservation Number(s) (Required) (Correctable) – reference to a particular transmission reservation being used to provide transmission capacity to support the transaction being described.
- 2.1.2.9.** Transmission Product (Required) (Correctable) – Specifies the firmness of service associated with the transmission reservation being used.
- 2.1.2.10.** Requesting PSE (Required) (Correctable) – identifies the entity that purchased and holds the transmission reservation being presented for use.
- 2.1.2.11.** Transmission Allocation Profile (Required) – profile of transmission reservation allocated by the Requesting Purchasing-Selling Entity for use for this Transaction.
- 2.1.3.** Load (Required) – set of data describing the physical and contractual characteristics of the energy sink.
  - 2.1.3.1.** Sink (Required) – the physical point at which the energy is being consumed. This may vary in granularity, dependent on local business practices.
  - 2.1.3.2.** Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Load Serving Entity and the distribution provider.
  - 2.1.3.3.** Miscellaneous Information (Correctable) – information provided at the requesting PSE’s option regarding the Transaction.
  - 2.1.3.4.** Energy Profile (Required) – energy to be consumed by the load for this Transaction.

**B. Curtailments and Reloads (Reliability Related Profile Modifications)**

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Curtailments and Reloads are special kinds of modifications to an Interchange transaction’s energy profile based on reliability concerns. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the transaction request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The TRANSACTION being curtailed or reloaded,
- All necessary profile changes to set the maximum flow allowed for the transaction during the appropriate hours,
- A contact person that initiated the curtailment or reload, and
- A description of the necessity for the schedule change.

**C. Market-Related Profile Modifications**

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Profile Modifications are changes to an Interchange TRANSACTION’S energy profile based on market desires. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the Interchange TRANSACTION request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The Interchange TRANSACTION being modified,
- All necessary profile changes to set the transmission capacity or energy flow to the desired levels during the appropriate hours, and
- A contact person that initiated the modification.

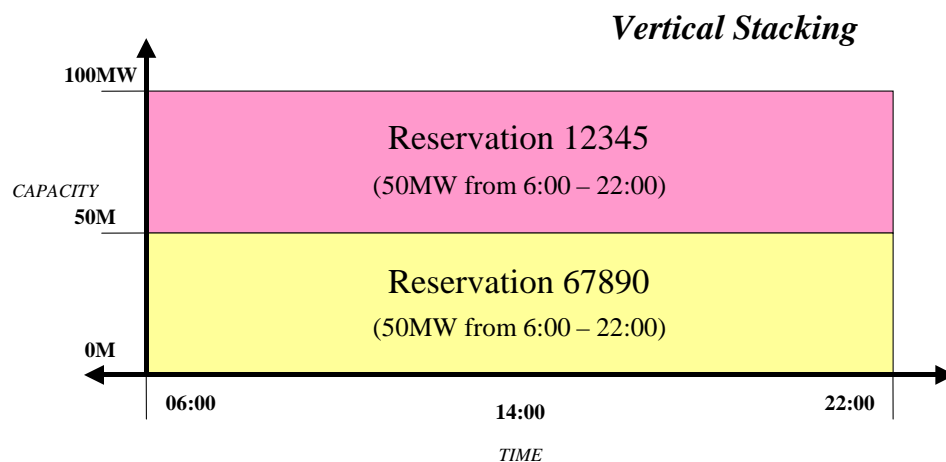
**D. Transmission Stacking**

***Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction***

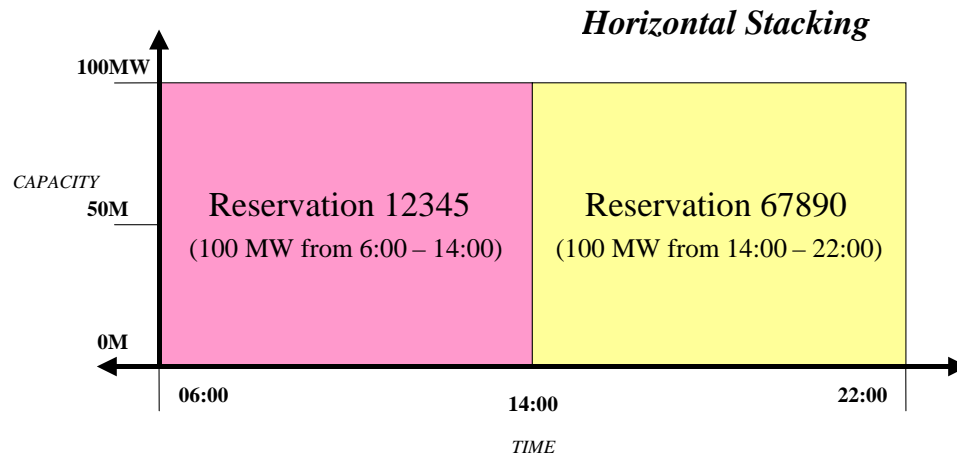
The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:

- Vertical stacking, in which a Requesting PSE combines multiple reservations to achieve a certain net level of transmission capacity, and
- Horizontal stacking, in which a Requesting PSE combines multiple reservations to achieve a certain transmission capacity coverage over time.

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



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Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their INTERCHANGE TRANSACTION, they must understand the following requirements:

- Stacks **MUST** be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the TRANSACTION'S energy flow.

## 004-D Appendix D Commercial Timing Tables

### Timing Requirements for all Interconnections except WECC

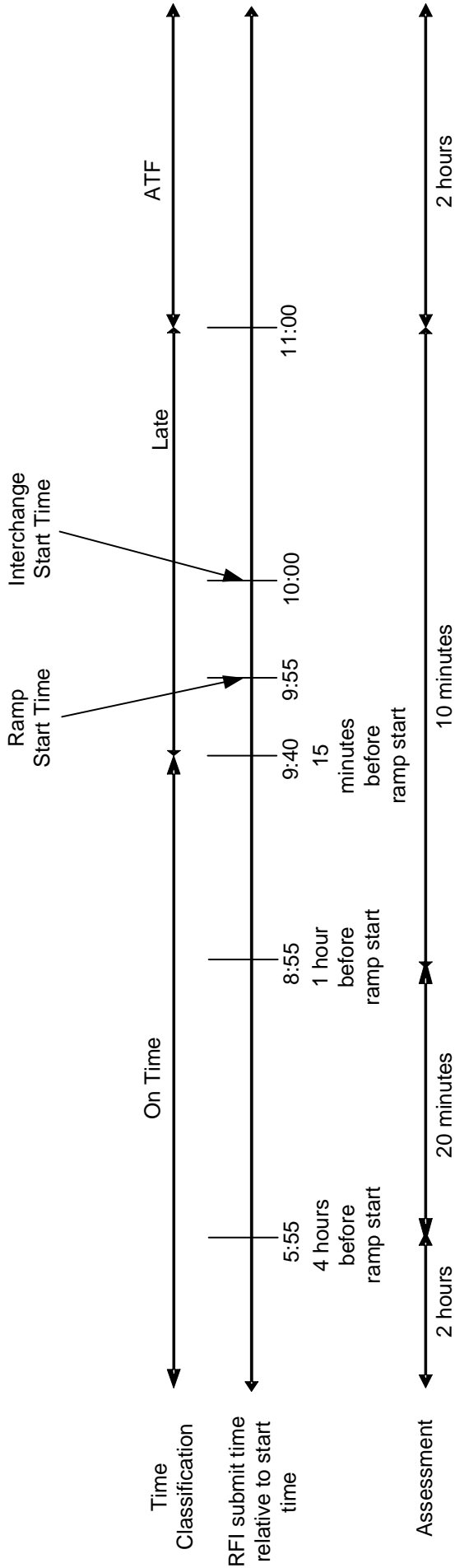
	A	B	C	D
	IA Assigned Time Classification	GPE, LSE, and PSE2 Conduct Market Assessments <sup>3</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
If Actual Arranged Interchange (RFI) <sup>1</sup> is Submitted	IA Makes Initial Distribution of Arranged Interchange			
> 1 hour after the RFI start time	≤ 1 minute from RFI submission	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
< 15 minutes prior to ramp start and ≤ 1 hour after the RFI start time	≤ 1 minute from RFI submission	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
< 1 hour and ≥ 15 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥ 1 hour and < 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

<sup>1</sup> Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

<sup>2</sup> This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

<sup>3</sup> These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

**Example of Timing Requirements for all Interconnections except WECC**



**Timing Requirements for WECC**

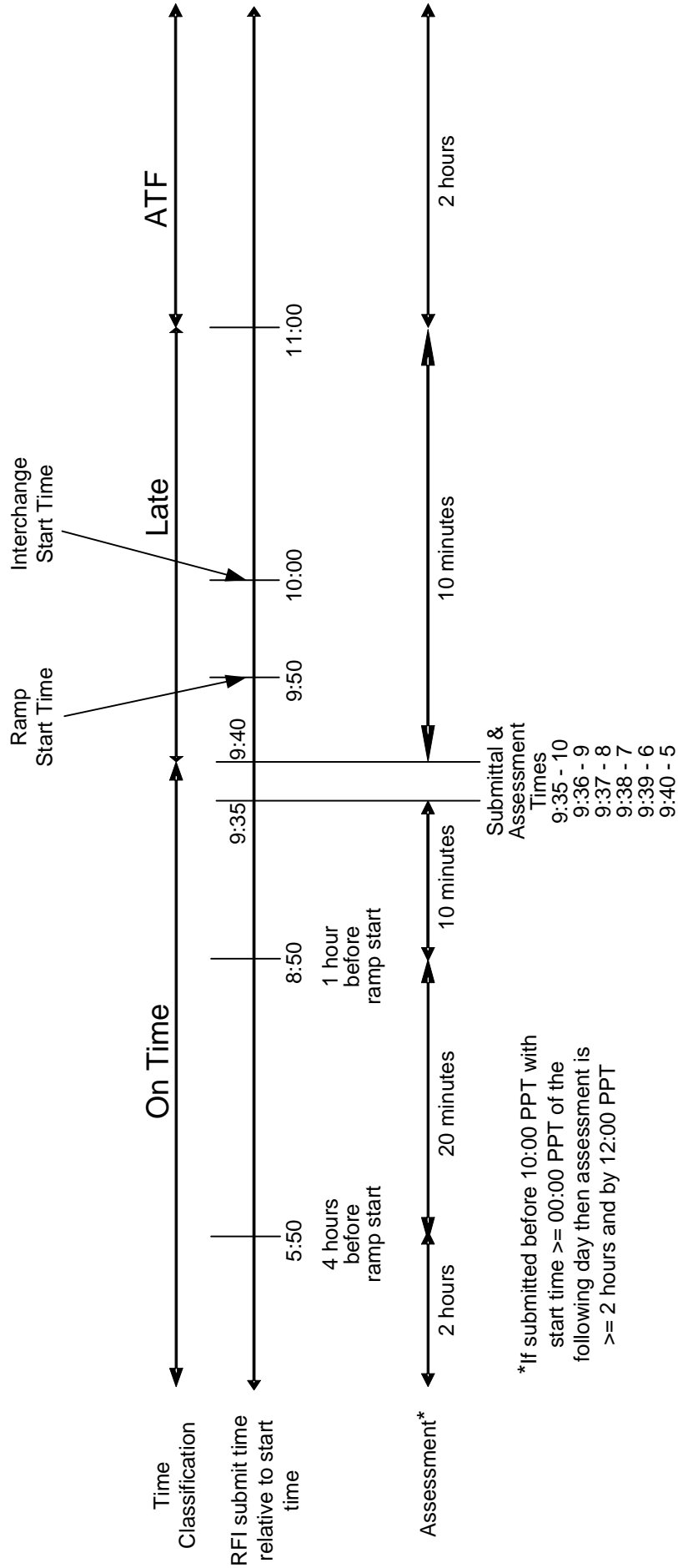
	A	B	C	D
	IA Makes Initial Distribution of Arranged Interchange	GPE, LSE, and PSE5 Conduct Market Assessments <sup>6</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
If Actual Arranged Interchange (RFI) <sup>4</sup> is Submitted	IA Assigns Time Classification			
>1 hour after the start time	After-the-fact	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
<10 minutes prior to ramp start and <1 hour after the start time	Late	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
10 minutes prior to ramp start	On-time	≤ 5 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
11 minutes prior to ramp start	On-time	≤ 6 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
12 minutes prior to ramp start	On-time	≤ 7 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
13 minutes prior to ramp start	On-time	≤ 8 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
14 minutes prior to ramp start	On-time	≤ 9 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
<1 hour and ≥ 15 minutes prior to ramp start	On-time	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥1 hour and < 4 hours prior to ramp start	On-time	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	On-time	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start
Submitted before 10:00 PPT with start time ≥ 00:00 PPT of following day	On-time	By 12:00 PPT of day the Arranged Interchange was received by the IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

<sup>4</sup> Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

<sup>5</sup> This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

<sup>6</sup> These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for WECC



## WEQ-000 Acronyms and Definitions

<u>TERM</u>	<u>DEFINITION</u>
<u>Straddle Ramp</u>	<u>Ramp that divides the start ramp duration equally across the profile block start or end time.</u>

## WEQ-004 Coordinate Interchange

### Introduction

Incorporate necessary revisions to the approved NAESB Coordinate Interchange Business Practice (R03013) to include added definitions, Industry transformation from Reliability Authority (RA) to the Reliability Coordinator (RC), and improvements to certain requirements of the Standard to ensure it is “lock-step” with the NERC Coordinate Interchange Standard. Coordinate Interchange standards establish the Interchange Transaction requirements for coordination of the commercial arrangements and to complement the NERC reliability standards.

### Applicability

The Coordinate Interchange business practice standards are applicable to Balancing Authority (BA), Reliability Coordinator (RC), Interchange Authority (IA), Transmission Service Provider (TSP), Purchasing-Selling Entity (PSE), Generator-Provider Entity (GPE), Load-Serving Entity (LSE), and any Transmission Purchasing-Selling Entity whose transmission approval rights are cited (TPSE).

### Definition of Terms - Reserved

004-0.1 **Approval Entity** — An entity that has approval rights for an Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE), and the Load-Serving Entity (LSE) that are included in the Arranged Interchange, as well as any Purchasing-Selling Entity (PSE) whose transmission rights are cited (TPSE) in the Arranged Interchange.

004-0.2 **Arranged Interchange** — The state where the Interchange Authority has received the Interchange information (initial or revised).

004-0.3 **Balancing Authority (BA)** — The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

004-0.4 **Balancing Authority Area (BAA)** - The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

- ~~004-0.5 — **Confirmed Interchange** — The state where the Interchange Authority has verified the Arranged Interchange.~~
- ~~004-0.6 — **Curtailment** — A reduction in the scheduled capacity or energy delivery of an Interchange transaction.~~
- ~~004-0.7 — **Generator-Providing Entity (GPE)** — The Purchasing-Selling Entity who is responsible for providing the source generation from owned, affiliated, or contractually bound generation.~~
- ~~004-0.8 — **Implemented Interchange** — The state where the Balancing Authority enters the Confirmed Interchange into its Area Control Error equation.~~
- ~~004-0.9 — **Interchange** — Energy transfers that cross Balancing Authority boundaries.~~
- ~~004-0.10 — **Interchange Authority (IA)** — The responsible entity that authorizes implementation of valid and balanced Interchange schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.~~
- ~~004-0.11 — **Interchange Block Accounting** — Energy accounting that assumes a beginning and ending ramp time of zero minutes. For accounting purposes, this moves the energy associated with the starting and ending ramps into the adjacent starting and ending clock time of the Interchange.~~
- ~~004-0.12 — **Interconnected Operations Service** — A service (exclusive of basic energy and transmission services) that is required to support the reliable operation of the interconnected bulk electric systems.~~
- ~~004-0.13 — **Load-Serving Entity (LSE)** — The responsible entity that secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.~~
- ~~004-0.14 — **Market Assembly** — The function responsible for coordinating the submittal of a completed and accurate Arranged Interchange from the Requesting Purchasing-Selling Entity to the Interchange Authority within an organized Market.~~
- ~~004-0.15 — **Market Period** — The period of time beginning with the Requesting Purchasing-Selling Entity (PSE), or its designee, making required purchase, sale, and transmission service arrangements to support the Arranged Interchange through the period of time when the Interchange Authority receives the Arranged Interchange.~~
- ~~004-0.16 — **Purchasing-Selling Entity (PSE)** — The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.~~
- ~~004-0.17 — **Reliability Coordinator (RC)** — The entity with the highest level of authority that has responsibility for the reliable operation of the bulk electric system, has the~~

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~~wide area view of the bulk electric system, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of interconnection reliability operating limits, which may be based on the operating parameters of transmission systems beyond any transmission operator's vision.~~

~~**004-0.18** — **Reliability Period** — The period of time beginning with the Interchange Authority (IA) requesting approvals from the reliability Approval Entities through the completion of the physical flow of the energy associated with the originally submitted Arranged Interchange.~~

~~**004-0.19** — **Request For Interchange (RFI)** - A collection of required data, as defined in Appendix C of this standard, necessary for the purpose of submitting to the Interchange Authority as an Arranged Interchange.~~

~~**004-0.20** — **Requesting Purchasing-Selling Entity (PSE)** — The entity that prepares and submits the Request For Interchange (RFI) to the Interchange Authority (IA) and holds the transmission reservation being presented for use.~~

~~**004-0.21** — **Sink Balancing Authority** — The Balancing Authority in which the load (sink) is located for an Interchange Transaction.~~

~~**004-0.22** — **Source Balancing Authority** — The Balancing Authority in which the generation (source) is located for an Interchange Transaction.~~

**Business Practice Requirements**

**004-1** All requests to implement bilateral Interchange (excluding Interchange for emergency energy) between a Source Balancing Authority and a Sink Balancing Authority, where ~~a one or both~~ Balancing ~~Authority is~~ Authorities are located in either the Eastern or Western Interconnection, shall be accomplished by the submission of a completed and accurate Request For Interchange (RFI) ~~to the Interchange Authority (IA).~~

**004-1.1** To the extent that Intra BA transactions are submitted as a Request for Interchange (RFI), those transactions will be subject to all provisions of this standard.

**004-1.2** RESERVED

**004-1.3** RESERVED

**004-1.4** RESERVED

**004-1.5** RESERVED

**004-1.6** RESERVED

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- 004-2** Until other means are adopted by NAESB, the primary method of submitting the Request For Interchange (RFI) ~~to the Interchange Authority~~ shall be an the e-Tag using protocols compliant and in accordance with the Version 1.8.1 Electronic Tagging Functional Specification, Version 1.8.
- 004-2.1** A backup or redundant electronic system shall be available for immediate use should the primary electronic means become disabled. as documented in Appendix A “Electronic Tagging Service Performance Requirements and Failure Procedures”.
- 004-2.2** RESERVED
- 004-3** Arranged Interchange that crosses Interconnection Boundaries (Eastern, Western, HQ (TransEnergie) or ERCOT) shall be subject to the submittal and approval timing requirements associated with the most restrictive interconnection involved in the Interchange.
- 004-3.1** For Interchange where the sink is in the Western Interconnection for same day transactions, the last Purchasing-Selling Entity before the DC Tie in the Eastern Interconnection shall be responsible for submitting the e-Tag.
- 004-4** ~~In the event of e-Tag system component failure, the requirements and procedures contained within Appendix A “Electronic Tagging Service Performance Requirements and Failure Procedures” shall be followed.~~RESERVED
- 004-4.1** RESERVED
- 004-4.2** RESERVED
- 004-5** It shall be the responsibility of the ~~load serving Purchasing-Selling Entity (PSE)~~LSE, or its designee, to ensure the completed and accurate ~~Request For Interchange (RFI)~~ contains, at a minimum, the information specified in Appendix C “Required Data Submission and Correctable Tag Data Modifications”.
- 004-6** Approval Entities shall only be allowed to take actions against an Arranged Interchange as specified in Appendix B “Interchange Transaction e-Tag Actions”.
- 004-6.1** Prior to the expiration of the market assessment period defined in the Appendix D, “Commercial Timing Tables”, Column B, the TPSE, LSE, and GPE may respond to a request from the Interchange Authority to transition an Arranged Interchange to a Confirmed Interchange. ~~Note: The TPSE, LSE, and GPE have optional approval rights. If the TPSE, LSE, or GPE does not respond, these rights will be treated as if approved. In addition, if the TPSE, LSE, or GPE is also the PSE creating the tag, these rights will be treated as approved.~~
- 004-6.1.1** Each TPSE, LSE, and GPE shall assess the Arranged Interchange for completeness and accuracy of the information contained in the Arranged Interchange.

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**004-6.1.2** If the TPSE, LSE, ~~and/or~~ GPE ~~does~~ not respond to ~~a request from an RFI~~, the ~~Interchange Authority, the Arranged~~ Interchange is considered passively approved ~~by that entity~~.

~~004-6.1.3 If the TPSE, LSE, or GPE is also the PSE creating the e-Tag, Arranged Interchange will be considered approved by that entity.~~

**004-6.2** RESERVED

~~004-7 All information on energy purchase, energy sale, and transmission service arrangements required for the RFI shall be performed prior to being submitted to the IA. RESERVED~~

~~At its discretion, the Requesting Purchasing-Selling Entity may defer this responsibility to the Market Assembly function.~~

**004-7.1** RESERVED

**004-8** ~~EASTERN AND WESTERN INTERCONNECTION TIMING REQUIREMENTS:~~

~~004-8.1~~ The completed and accurate ~~Request for Interchange (RFI)~~, or ~~modification to a modified~~ Arranged Interchange submitted to the Interchange Authority shall be subject to the timing requirements contained in this standard under Appendix D "~~Commercial~~ Timing Table."

~~004-8.1~~ RESERVED

~~004-8.2 Transactions that cross interconnection boundaries involving ERCOT shall follow the timing requirements contained within this Standard. RESERVED~~

**004-8.3** RESERVED

**004-9** All denials of Arranged Interchange by an Approval Entity during the assessment period (reliability and market) shall be accompanied by the reason for such denial and communicated to the Interchange Authority and by the Interchange Authority to the Requesting ~~Purchasing-Selling Entity~~ PSE.

**004-10** Any changes to the status of the Arranged, Confirmed, or Implemented Interchange shall be communicated by the Interchange Authority to all involved parties ~~of listed on the Interchange, such as Balancing Authorities, Reliability Coordinators, Generator-Providing Entity, Load-Serving Entity, and Transmission Service Provider~~ se-Tag.

**004-11** The Requesting PSE shall have the right to request modifications to the Arranged, Confirmed or Implemented Interchange for non-reliability related issues according to the timing requirements in Appendix D ~~set forth in this Standard. For Implemented Interchange, only "future" hours may be modified.~~ "Commercial Timing Table".

**004-11.1** The Requesting PSE can request to increase or decrease the energy level or the committed transmission(s) profile of an Arranged, Confirmed or

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Implemented Interchange. ~~For Implemented Interchange, only “future” hours may be modified.~~

~~a) In the case of an increase in the energy level, the Requesting PSE must provide and modify the necessary transmission capacity to cover the increased energy flow.~~

**004-11.2** The Requesting PSE shall have the right to request an extension to the Arranged, Confirmed or Implemented Interchange energy profile prior to completion to reflect a desire to flow energy during hours not previously specified.

**004-11.2.1** ~~The Requesting PSE must provide the necessary transmission capacity with the extension.~~

RESERVED

**004-11.3** If the modification is denied by any Approval Entity, the previous ~~confirmed~~Confirmed or Implemented Interchange remains valid, including the duration period.

**004-11.4** The Requesting PSE shall submit a transmission capacity profile that is greater than or equal to the energy profile.

**004-12** All parties involved in the Arranged Interchange shall have, or arrange to have, ~~personnel and facilities on site and immediately~~resources available ~~for~~to process notification of changes to the Arranged Interchange from the beginning of the Market Period through the time when the energy flow of the Implemented Interchange has been completed.

**004-13** Unless provided for under a FERC-approved market mechanism, energy accounting for all Interchange Transactions shall be accomplished via Interchange Block Accounting.

**004-14** Settlement of losses shall be ~~either handled~~designated as financial or as payment in-kind in accordance with the Transmission Service Provider tariff and posted business practices.

**004-14.1** For losses ~~handled~~designated as payment in-kind, ~~the~~returned concurrently the requesting PSE, ~~or its designee,~~ shall ~~communicate to~~designate in the ~~IA, via Arranged Interchange~~RFI the amount of MW losses and the entity that should receive them along the Interchange path.

**004-15** All Reliability Coordinators, Balancing Authorities, Transmission Service Providers, Generator-Providing Entity, Load-Serving Entity, and other entities involved in an Interchange request shall not disclose the Interchange Transaction information to any ~~PSE~~entity not involved in the Interchange ~~transaction~~Transaction.

**004-16** ~~After a curtailment of Interchange has ended, the Sink Balancing Authority shall return the Interchange profile to the previous level, unless otherwise specified by the entity submitting the Request For Interchange.~~

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**004-17** ~~Default~~All ramps shall be Straddle Ramps. Instantaneous ramps are indicated by a zero minute ramp duration. Ramp durations are specified in minutes. The ramp start is calculated by dividing the ramp duration by two and subtracting this quantity from the profile block start time. The ramp end time is calculated by dividing the ramp duration by two and adding this quantity to the profile block start time. The final profile block implies a ramp down to zero starting at one-half the end ramp duration subtracted from block end time and continuing to one-half the end ramp duration added to the block end time. The ramp start and stop times represent minutes over which generation will increase or decrease from the previous block level to the current block level.

Ramp durations of any value may be specified in a RFI and must be agreed to by all parties with approval rights involved in the RFI.

If no ramp duration is included on the e-Tag for the North American Interconnection~~Interconnections~~ the default ramp duration shall be as follows:

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**004-17.1** Default ramp duration for the Eastern Interconnection shall be 10 minutes ~~equally across the start and end times of the Implemented Interchange (i.e., 5 minutes before start and 5 minutes after the end time of the implemented Interchange) unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

**004-17.2** ~~004-17.2~~—Default ramp duration for the Western Interconnection shall be 20 minutes ~~equally across the top of the hour (i.e., 10~~

~~**004-17.3** The default ramp that crosses the Eastern and Western Interconnections shall be 20 minutes before start and 10 minutes after the end time of the Implemented Interchange) of the Implemented Interchange unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

**Coordinate Interchange for Capacity Benefit Margin**

004-18\_ All scheduled use of a Transmission [Service](#) Provider's transmission capacity set-aside for Capacity Benefit Margin (CBM) in support of energy imports into a load Balancing Authority [Area](#) served by the Transmission [Service](#) Provider shall be uniquely represented in all ~~-RFI~~ submitted to the IA.

004-18.1 ~~The~~ Until other means for submitting the RFI are adopted by NAESB, the following data fields shall be specified in each e-Tag requesting the use of the Transmission [Service](#) Provider's CBM:

- The e-Tag transaction type shall be EMERGENCY\_.
- The Transmission PSE (TPSE) listed in the physical segment where CBM is being requested shall be the registered Entity Code of the Load Serving Entity requesting use of CBM. Note that this is not necessarily the PSE submitting the e-Tag.
- The Transmission Product associated with the Transmission [Service](#) Provider whose use of CBM is being requested shall be 7-CB\_.

004-18.2 The Transmission [Service](#) Provider may require the specification of a unique Transmission Reservation Number in association with any request for use of CBM. Such requirement shall be fully documented in the Transmission [Service](#) Provider's Business Practices posted on OASIS. The [Transmission Service Provider](#) reserves the right to deny any RFI requesting use of CBM if the required Transmission Reservation Number is not specified.

004-19 MW values specified in Interchange Transactions must be integrated into MWh values across various time intervals. Interchange Transactions that start or stop within an hour may result in fractional MWh values being calculated for the period. Additionally, these values may be used to calculate totals for longer periods (such as a portion of a day, whole day, week, month, etc). These total numbers may vary depending on the method used to perform the calculation. In order to ensure consistent treatment across the industry where whole MWh values are used, the following calculation guidelines shall be followed:

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004-19.1      For time periods of an hour or less, MWh values shall be rounded to the nearest whole MWh (< .50 down, >= .50 up) for each time interval.

004-19.2      For time periods of an hour or more (e.g. a day, a week, the off-peak hours for a day, etc.), calculate and round the MWh values for each individual hour within the time period, then sum the hourly results to get the MWh value for the whole time period.

## 004-A Appendix A – Electronic Tagging Service Performance Requirements and Failure Procedures

This ~~document~~[appendix](#) describes the performance requirements of the e-Tag ~~Systems~~[system](#) and the procedures to be followed in the event of an e-Tag ~~Systems~~[system](#) component's failure. Due to the importance of accurate information flow, these procedures and requirements have been developed to ensure that reliable data communications remain available at all times.

### A. Performance Requirements

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#### ***e-Tag Agent Service Requirements***

Entities that are required to use e-Tag ~~agent services~~[Agent Services](#) are responsible for obtaining an e-Tag ~~agent service~~[Agent Service](#) in order to conduct business; there are no exemptions to this requirement. There is no specific requirement against which performance should be measured. However, in cases of e-Tag ~~agent service~~[Agent Service](#) failure, non-receipt of critical information (such as curtailment notifications, transaction denials, and schedule modifications) due to performance problems shall be the responsibility of the e-Tag ~~agent~~[Agent Service](#) user.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the e-Tag ~~agent~~[Agent Service](#) user is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

#### ***e-Tag Approval Services***

Entities that are required to employ e-Tag ~~approval services~~[Approval Services](#) are responsible for providing an e-Tag ~~approval service~~[Approval Service](#) as well as providing a level of redundancy; there are no exemptions from this requirement. At a minimum, e-Tag ~~approval services~~[Approval Services](#) may not have greater than 1.0% of the e-Tags sent to their system within a calendar month be determined by the ~~Interchange e-Tag~~ Authority Service as having a state of "COMM\_FAIL." While there is no specific level of redundancy that is required by this ~~Appendix~~[appendix](#), sufficient redundancy must be in place that the entity is confident of achieving this standard.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the entity required to employ the e-Tag ~~approval service~~[Approval Service](#) is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

In order to monitor compliance with this requirement, the Balancing Authorities will arrange with their ~~e-Tag~~ Authority Services to generate compliance reports at the beginning of each month determining this metric for the previous month ~~on a Provider-by-Provider basis~~. These ~~results should be reports shall be~~ available for ~~investigation of any violations, and the results of this investigation may be posted once finalized~~[five years](#).

## ~~Interchange e-Tag Authority (IA) Services~~

### ~~Service~~

As the ~~Interchange e-Tag Authority~~ service~~Service~~ is the most critical element of the e-Tag system, it must meet much higher standards. ~~These standards can be divided into two areas: Implementation, and Policies and Performance.~~

### ~~Implementation~~

~~Interchange Authority services must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, an Interchange Authority service must provide, at a minimum, the following:~~

- ~~• Two or more connections to the Internet, which may either be available concurrently or be switch able on-demand (within five minutes);~~
- ~~• Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);~~
- ~~• Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc...).~~

~~— Providers of Interchange Authority services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.~~

### ~~Policies and Performance~~

The following shall be required of all ~~Interchange e-Tag~~ Authority services~~Services~~:

- ~~• All scheduled outages must~~should~~ be performed between the hours of 01:00 CST and 04:00 CST. Any maintenance that must be performed outside this three hour window must be accomplished through the use of redundant systems in such a manner that no outage is visible;~~
- ~~• Notice of Scheduled~~scheduled~~ outages must be given to the public at least~~24 hours before the outage is to occur.~~ Notice shall be deemed valid if the following actions have been taken:~~
- ~~2. • Users of the system are sent notifications, by the e-Tag Authority Service or designated third party via email or via a proprietary system, time stamped at least 24 hours prior to the outage;~~
- ~~3. • The TISFORUM mailing list is sent Email notification time stamped at least 24 hours prior to the outage;~~
- ~~4. • The OASIS TSIN mailing list is sent email notification time stamped at least 24 hours prior to the outage.~~

~~Any system problem that creates behavior contrary to that described in the e-Tag specification shall constitute an "unscheduled outage." For example, a system that begins rejecting every third message it receives due to a component failure in a cluster would constitute an unscheduled outage (although the system was~~

~~only failing one third of the time, it was not performing as described in the e-Tag specification).~~

- ~~Interchange Authority services may~~ Services shall not be in a state of scheduled or unscheduled outage for more than 0.5% of the time for the month, based on outage time (in minutes) for the month divided by total time in the month (in minutes). ~~Specific allowed outages may be granted to address special circumstances (i.e., scheduled specification changes, major internet outages, etc...).~~ These specific allowed outages, if granted, may require public posting for all customers to view

Any system problem that creates behavior contrary to that described in the Version 1.8.1 Electronic Tagging Functional Specification shall constitute an unscheduled outage. For example, a system that begins rejecting every third message it receives due to a component failure in a cluster would constitute an unscheduled outage.

While it is acceptable for an entity to contract with a third-party to provide for these requirements, it should be understood that the entity required to employ the ~~Interchange E-Tag Authority service~~ Service is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

To monitor compliance with these requirements, ~~the Operator of an Interchange Authority system may be required~~ Balancing Authority will require its e-Tag Authority Service to submit, at the beginning of each month, a report describing outage activity for the previous month. This report shall consist of the following items:

1. The beginning of the outage;
2. The ending of the outage;
3. The type of outage (Scheduled or Unscheduled);
4. The nature of the outage (Maintenance, System Crash, etc...);
5. In the event of an Unscheduled Outage, the cause of the outage and the steps taken to ensure the problem has been addressed and will not reoccur.

~~The report format may be in a standardized electronic form. These documents may be evaluated and held in confidence. Statistics may be developed from these reports identifying system outage durations for each month. These preliminary findings will be held in confidence until they are confirmed. These performance percentages shall be posted and electronically accessible once confirmed, at the end of the month following the month evaluated. available for five years.~~

~~Entities experiencing difficulty due to an unnoticed scheduled or unscheduled outage may send a Request for Investigation. This request should specify the estimated time the outage occurred, the estimated time the outage ended, and document evidence of the outage (such as TMP logs, email messages, etc...). Claims may be investigated with the appropriate Tag Authority Service Operator. Should a Tag Authority Service Operator be unable to refute the claim, and the Investigation Requestor appears to have provided an accurate representation of an undocumented outage, calculated outage percentages may be modified to include the undocumented incident.~~

## **B. Failure Procedures**

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Backup procedures are needed because, in a communication system that operates on the public Internet, failures are certain to occur. The failures may be caused as a result of overload of the network, loss of connection to an Internet service provider, corruption of one or more servers by computer hackers, failure of one or more entity's Internet servers, internal firewall failure, and many other reasons.

Failures also have a wide variety of scopes. A failure may affect a single entity with a small number of schedules while all of its neighbors continue to operate normally, a small number of utilities in a local area, or a regional RTO with thousands of active schedules. However failures occur, the operation of the electric utility grid must continue. This document describes the manner in which operations are to be coordinated should such a failure become a reality.

### ***Assumptions***

A general assumption is that each operational entity in the electric utility industry has an internal energy management system, marketing system, or contract system that will not be affected by the Internet communication failure.

### ***Participating Entities***

**Requesting PSE** - The entity that prepares and submits an RFI, normally a Purchasing Selling Entity.

**Path Participant** – Any of the entities that are part of an Interchange transaction.

**InterchangeE-Tag Authority Service Entity** – The entity that provides the Interchange Authority service for an e-Tag. The [InterchangeE-Tag](#) Authority service itself is typically a computer system that maintains the master database for the tag and communicates status with other computer systems. The [InterchangeE-Tag](#) Authority Service Entity is the utility industry entity that is responsible for providing the service. In [the Electric Industry Registrye-Tag 1.8](#), this entity's [URL](#) is [specified by](#) the Sink Balancing Authority.

**Approval Entity** – An entity that has approval rights for Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE) and the Load-Serving Entity (LSE) involved in the Arranged Interchange

**Checkout Partners** – The entities that perform the checkout process. Most commonly two adjacent Balancing Authorities checking net interchange. It might also be two marketers checking sales and purchases, or a transmission customer checking schedules with a transmission provider.

### ***Failure Actions***

When a failure occurs an entity will soon realize that it has lost communications with the other servers in the electronic tagging arena. Yet it must still communicate current energy flows across the transmission network and expected flows for the next few hours. Transmission curtailments must be accounted for in the sense that a required reduction in energy flows or increase in generation needs to be communicated. However, accounting issues will take a secondary priority to reliability issues in this exchange, and detail relating back to tags, schedules, and transmission reservations can be reconstructed later.

### **E-Tag Authority Failure Actions**

When a failure occurs at the level of E-Tag Authority, the effects will trickle down to not only all of the users of that Authority, but also to any participating entity wishing to submit a RFI with a user of the failed E-Tag Authority. While reliability will be the focus during this time, the following procedures shall be used until functionality returns to the E-Tag Authority.

1. Reliability entities will adhere to all currently Implemented schedules as communicated to them prior to the E-Tag Authority outage. This will continue until the outage ends or to 4-hours from the beginning of the outage, whichever occurs sooner.
2. As the E-Tag Authority service is down, E-Tags will not be created via that service until operation is reinstated. Subsequently, any tags made via a different E-Tag Authority entity will not be able to communicate to the downed entity and therefore, no transactions with approval entities that use the downed E-Tag Authority service will be approved.
3. The Interchange Authority will broadcast a message by email and/or electronic messaging systems to all entities within its authority service. The message should forecast a recovery time for the E-Tag service. In the meantime, the E-Tag Authority Service is down.
4. Reliability Coordinators must contact the sink Balancing Authority via phone to communicate changes to schedules due to TLR curtailments, reloads or any other reliability change.
5. The Interchange Authority will communicate any reliability changes to other reliability entities within the E-Tag's physical contract path, including the source Balancing Authority, transmission providers and any applicable scheduling entities.
6. Interconnecting Balancing Authorities will continue to verify Net Scheduled Interchange prior to each operating hour.
7. If 4-hours from the original outage time have passed, Requesting PSEs may submit paper copies of the RFI via FAX to the Interchange Authority, excluding the WECC. For the WECC, the only acceptable mechanism for creating a Request For Interchange is creation of a new e-Tag Request.
8. The Interchange Authority will evaluate the paper RFI and will collect the approvals for all valid requests from each Reliability entity, including the source Balancing Authority, transmission providers and any applicable scheduling entities. The IA will communicate the final approval status to all entities. All entities must approve the transaction before being included in any entity's Net Scheduled Interchange.
9. After the outage is complete, each entity will take steps to ensure proper accounting adherence for all applicable approved transactions.

**Singular Failure Actions**

The table below lists typical failures that might occur and the emergency actions that the entity will take to compensate for that failure.

<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup actions</b>
Requesting PSE	Unable to submit tag to <a href="#">Interchange E-Tag</a> Authority Service.	Ask another entity in the transaction chain to submit the schedule for you. That entity then becomes the author.  For Interconnections, excluding the WECC, create a backup paper copy of the schedule and fax to authority service entity and all approval entities in the transaction. For the WECC, the only acceptable mechanism for creating <a href="#">an a</a> Request For Interchange is creation of a new e-Tag Request.
Path Participant	Not receiving update messages.	Use Recovery Process to resynchronize from authority service.  Use telephone with Authority Service Entity to update status.
Interchange Authority Service Entity	Unable to send messages to generation or load Balancing Authorities.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity for these control areas.  Telephone Approval Entity to notify of the message failure.  Approve or deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an Approval Entity for an intermediate Transmission Provider or Balancing Area.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity.  Telephone Approval Entity to notify of the message failure.  Approve the schedule automatically.  Deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an information only entity.	No Action required.
<a href="#">Interchange Authority Service Entity</a>	<a href="#">Unable to receive messages.</a>	<a href="#">Broadcast a message by email or fax to all entities that use your authority service. The message should forecast a recovery time for your service. In the meantime, your Interchange Authority Service is down.</a>

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<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup actions</b>
Approval Entity	Unable to receive messages from an authority service.  (The Authority has an obligation to notify you and the authoring PSE.  The Authoring PSE has an obligation to fax the tag to the approver.)	Use the Recovery Process to resynchronize from Authority Services or Central Repository.  Telephone the Authority Service entity with the approval or denial of the schedule.
Approval Entity	Unable to send messages to an authority service.	Telephone the Interchange Authority Service Entity with approval or denial of the schedule.
Checkout Partner	Unable to exchange messages.	Telephone net exchange to the checkout partner.  Create a backup paper copy of the checkout data and fax to the checkout partner.

Notes:

1. The first action in every case is to attempt to establish connection by using an alternate communication method, a second Internet service provider, dial up connection, or a private network if one is available.
2. Next, the backup actions are attempted in the order specified.
3. The backup actions include printing paper reports from the internal energy management system. The reports include a schedule detail report for a short time period, net exchange between two operational entities, and transmission reservation usage between a transmission provider and a customer.
4. Every backup action list ends with a fax or telephone call that is completely independent of the public Internet.

**Reports**

Three reports have been designed to communicate energy flows and transmission reservation usage between partner entities with a tie where possible back to the schedules as known before the communication failure.

**Net Exchange**

A Net Exchange report is a paper summary of Interchange:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entity and the partner entity are any two entities that share common schedules.

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- The date and time are the date and time of the report.
- Net schedules are the net of schedules from and to the other entity.
- TO is a sum of the schedules from the entity to the partner entity.
- FROM is a sum of the schedules from the partner entity to the entity.
- Tag or fragment lines represent the data from each tag or fragment that was known at the time of the failure or has been entered later.
- Recent adjustment lines represent a summary of changes to the schedules that occurred since the failure.

### ***Schedule Detail***

A Schedule Detail report is a paper copy of an individual schedule. It includes:

- The schedule identification number and most current active revision number.
- The fully expanded energy schedule for a period of the current hour to a few hours in the future, up to 24 hours.
- The complete path with all OASIS and contract references.

### ***Reservation Usage***

A transmission Reservation Usage report is a summary of Reservation Usage:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entities on the report are a transmission provider and a transmission contract holder.
- Gross reservations is the sum of reservations. Usage is the sum of usage.
- The detail lines are tag or fragment usage of reservation, organized by product and OASIS reservation number.

### ***Recovery Process***

The last backup issue is the recovery of current status when the communication link is reestablished. The recovery is accomplished by a query request to the Interchange Authority service for each entity that the entity does business with. The query returns a list of all the schedules that reference that entity with the schedule ID, the current version number and the last modified date and time.

The recovering entity then compares with its own database and updates his database to be current with the Interchange Authority's database. When all Interchange Authority services have been queried, the recovery is complete.

If the entity desires, it can request a complete audit history of each schedule.

**004-B Appendix B**

**Transaction e-Tag Actions**

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***For Eastern and Western Interconnections***

The table below explains the various e-Tag actions that are possible, and the entities that are entitled to initiate these actions:

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
Approve a Tag Request	Economic, Reliability, or Contractual	Set Status (to Approved)	Approval Entity*	Approver indicates approval
Deny a Tag Request	Economic, Reliability, or Contractual	Set Status (to Denied)	Approval Entity*	Approval indicates denial
Study a Tag Request	Economic, Reliability, or Contractual	Set Status (to Studied)	Approval Entity*	Approval indicates the tag has been viewed, but have not committed to a decision
Withdraw a Tag Request	Economic	Withdraw Request prior to request implementation	Requesting PSE**	Request is dead
Cancel a New Tag	Economic	Request Profile Change— Set Energy and Capacity for the transaction to zero prior to transaction start	Requesting PSE**	Tag is dead
Terminate a Tag	Economic	Request Profile Change— Set Energy and capacity of the transaction to zero from a point of time forward	Requesting PSE**	Portion of tag is dead
Extend an e-Tag	Economic	Request Profile Change— Append additional hours onto an existing transaction	Requesting PSE**	Tag is extended
Reduce an e-Tag	Economic	Request Profile Change— Decrease Energy flow or Committed Transmission	Requesting PSE**, Market Operator***	Profile is Decreased

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<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
		<u>Reservation(s) for a transaction for a specific set of hours</u>		
<u>Increase an e-Tag</u>	<u>Economic</u>	<u>Request Profile Change— Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</u>	<u>Requesting PSE**, Market Operator***</u>	<u>Profile is Increased</u>
<u>Curtail an e-Tag</u>	<u>Reliability (SOL Violation, Loss of Gen, loss of Load)</u>	<u>Request Profile Change— Limit Energy flow for a transaction for a specific set of hours</u>	<u>Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator</u>	<u>Profile is Decreased</u>
<u>Reload an e-Tag</u>	<u>SOL Violation eliminated, Generator Returned, Load Returned</u>	<u>Request Profile Change— Release Limit of Energy flow for a transaction for a specific set of hours</u>	<u>Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator</u>	<u>Profile is Increased</u>

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Approval Needed</b>	<b>Result</b>
<u>Approve a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Approved)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates approval</u>
<u>Deny a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Denied)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates denial</u>
<u>Study a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Studied)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates the tag has been viewed, but have not committed to a decision</u>
<u>Withdraw a Tag Request</u>	<u>Economic</u>	<u>Withdraw Request prior to request implementation</u>	<u>Requesting PSE**</u>	<u>no</u>	<u>Request is Withdrawn</u>
<u>Cancel a New Tag</u>	<u>Economic</u>	<u>Request Profile Change – Set Energy and Capacity for the transaction to zero prior to transaction start</u>	<u>Requesting PSE**</u>	<u>yes</u>	<u>Tag is Cancelled</u>

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<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>	
<a href="#">Terminate a Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Set Energy and capacity of the transaction to zero from a point of time forward</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Portion of tag is Terminated</a>
<a href="#">Extend an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Append additional hours onto an existing transaction</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Request is approved and the e-Tag is extended</a>
<a href="#">Reduce an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Decrease Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***, Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Market Level Profile and/or Transmission Allocation Profile is Decreased</a>
<a href="#">Increase an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***</a>	<a href="#">yes</a>	<a href="#">Profile is Increased</a>
<a href="#">Curtail an e-Tag</a>	<a href="#">Reliability (TLR, SOL Violation, Loss of Gen, loss of Load)</a>	<a href="#">Request Profile Change – Limit Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Profile is Decreased</a>
<a href="#">Reload an e-Tag</a>	<a href="#">SOL Violation eliminated, Generator Returned, Load Returned</a>	<a href="#">Request Profile Change – Release Limit of Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator</a>	<a href="#">yes</a>	<a href="#">Profile is Increased</a>

Notes:

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\*~~Purchasing-Selling Entities~~GPEs, LSEs, and ~~Load-Serving Entities~~TPSEs may elect to defer their approval rights to the Host Balancing Authority of their facilities. For more information, see PSE and LSE approval rights below

\*\*In some situations, Balancing Authorities implement certain Interchange Transactions or Interchange Schedules, such as bilateral inadvertent payback, Dynamic Schedules, and emergency schedules from Reserve Sharing Groups. In these situations, the Balancing Authority serves as the Purchasing-Selling Entity and can perform these actions.

\*\*\*Entities registered as market operators and serving as either source or sink for a Transaction may exercise such functions in order to indicate correct flow based on market clearing.

\*\*\*\*With the addition of Source BA, Sink BA, Transmission Service Provider and Reliability Coordinator to the list of entities available to reduce E-Tag energy and transmission profiles, those entities will use that function for any non-reliability market operations as necessary. The curtailment option will only be used for the reliability reasons as described. The curtailment issuer should include the reason for the action in their request for the profile change.

***PSE and LSE Approval Rights***

~~Purchasing-Selling Entities providing generation-Generation Providing Entities (GPE) and~~, Load-Serving Entities (LSE), ~~and Transmission Purchasing-Selling Entities (TPSE)~~ have ~~been granted~~ the right, but not the obligation, to approve Transaction requests ~~using~~citing their resources. ~~Only GPE's who are capable of controlling the output of the source generator should be allowed~~A GPE (for Sources) or a LSE (for Sinks) can specify an alternate approval rights-entity in the Master Registry. If ~~PSEs~~GPEs and LSEs specify an approval service in the Master Registry, then they are expected to approve/deny Transactions when so requested. Otherwise, their Host Balancing Authority is expected to act on their behalf. The following table illustrates the proper way to interpret this requirement:

<b>If the <u>PSE...GPE</u> or <u>LSE...</u></b>	<b>Specified an <u>alternate Approval</u> <u>URL</u><u>Entity</u></b>	<b>The <del>PSE should be</del> <u>grantedalternate entity</u> <u>has</u> rights to approve or deny</b>
	<b>Did not <u>specifySpecified</u> an Approval URL</b>	<b>The BA should have <u>proxy approval rights for</u> <u>the PSE</u><u>The PSE has</u> <u>rights to approve or deny</u></b>
	<b>Did not specify an <u>Approval URL</u></b>	<b>The Host BA should have <u>proxy approval rights for</u> <u>the PSE</u></b>

## 004-C Appendix C – Data Submission and Modifications

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### A. Required and Correctable e-Tag Data

#### A. for New Interchange Transactions

A new Interchange transaction is an Arranged Interchange (e-Tag) that has not yet been approved or confirmed for implementation. Such Arranged Interchange must be presented to those Approval Entities (as e-Tag) that are responsible for the implementation of the Interchange transaction in order that they may evaluate the e-Tag and determine whether or not the Interchange can be implemented.

The following information describes what is ~~to be used to describe required and what is correctable in~~ such ~~an~~ Request For Interchange ~~transaction~~.

(RFI). “Correctable” as used below indicates a field that may be modified by the RFI author prior to a RFI reaching a composite state of CONFIRMED. The lack of this term below indicates that the field is not correctable. “Required” as used below indicates a field must be populated with data in order for the RFI to be considered valid. The lack of this term indicates that the field is not required.

### 1. Market Information

#### 1.1. RESERVED

1.2. Financial Path (Required) – the description of financially responsible parties for the Interchange in order. This will typically start with a Purchasing-Selling Entity providing generation (GPE) and finish with a Load Serving Entity (LSE), and where applicable, intermediate Purchasing-Selling Entities between the two.

1.2.1. Energy Title Holder(s) (Required) – the identity of the entities financially responsible to take and/or deliver the energy as described in the physical path. This will typically be a Purchasing-Selling Entity providing generation (GPE), a Load Serving Entity (LSE), and where applicable, Intermediate Purchasing-Selling Entities.

1.2.1.1. Energy Product Type (Required) (Correctable) – the type of energy delivered by the Energy Title Holder.

1.2.1.2.

1.2.1.3. Contract Number(s) (Correctable) – reference to a Transaction entered into by the Energy Title Holder with one or more other participants in the Transaction.

1.2.1.4. Miscellaneous Information (Correctable) – information provided at the Requesting PSE’s option regarding the Transaction.

### 2. Physical Information

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- 2.1. Physical Path (Required)** – the description of physically scheduling parties for the Interchange in order and related to the financially responsible parties described above. This will always contain a Generation segment, at least one Transmission segment, and a Load segment.
  - 2.1.1. Generation (Required)** – set of data describing the physical and contractual characteristics of the energy source.
    - 2.1.1.1. Source (Required)** – the physical point at which the energy is being generated. This may vary in granularity, dependent on local business practices.
    - 2.1.1.2. Contract Number(s) (Correctable)** – reference to a schedule or agreement entered into by the Purchasing-Selling Entity providing generation (GPE) and the Generator Operator.
    - 2.1.1.3. Miscellaneous Information (Correctable)** – information provided at the Requesting PSE's option regarding the Interchange Transaction.
    - 2.1.1.4. Energy Profile (Required)** – energy to be produced by the Generator Operator for this Transaction.
  - 2.1.2. Transmission (Required)** – set of data describing the physical and contractual characteristics of a wheel (import, export, through, etc.).
    - 2.1.2.1. Transmission Service Provider (Required)** – the identity of the transmission provider that is wheeling the energy.
    - 2.1.2.2. Point of Receipt (Required) (Correctable)** – valid Point of Receipt for scheduled Transmission Reservation.
    - 2.1.2.3. Point of Delivery (Required) (Correctable)** – valid Point of Delivery for scheduled Transmission Reservation.
    - 2.1.2.4. Scheduling Entities (~~Correctable~~Required in Western Interconnection)** – entity that is physically scheduling interchange on behalf of the Transmission Service Provider in order to provide wheeling services. Typically this is the Balancing Authority for the Transmission Service Provider, but may be several Balancing Authorities supporting a regional transmission service. If the Scheduling Entity code for the physical segment is not identical to the Transmission Service Provider (TSP) code on that physical segment, the Scheduling Entity code must be explicitly specified or required. ~~This field is required for the Western Interconnect.~~
    - 2.1.2.5. Loss Provision Information (Required) (Correctable)**– Information describing the manner in which losses are accounted when they are not scheduled as in-kind megawatt distributions through the original transaction. Types may be financial (paid in dollars based on tariff provisions), internal (scheduled in megawatts to the Transmission Service Provider from a resource inside the Transmission Service Provider's area), or external (scheduled in megawatts to the Transmission Service Provider from a resource outside the Transmission Provider's area). If internal or external, must specify contract numbers or Transaction IDs.

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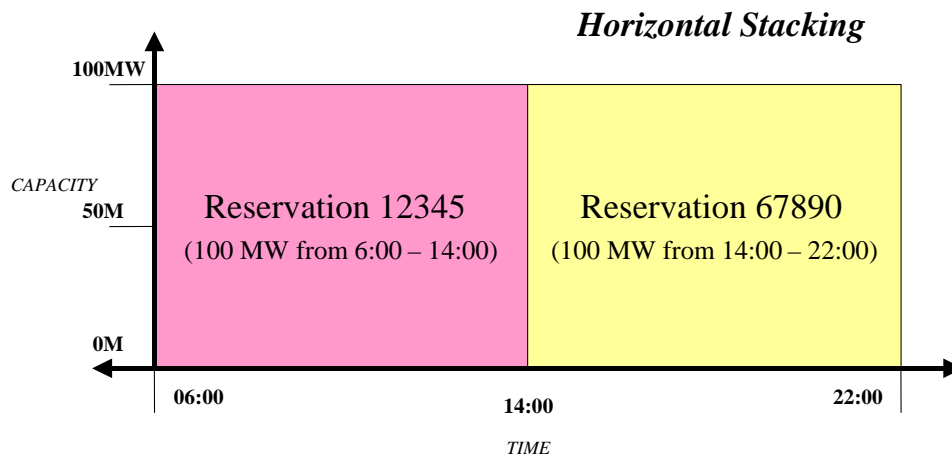
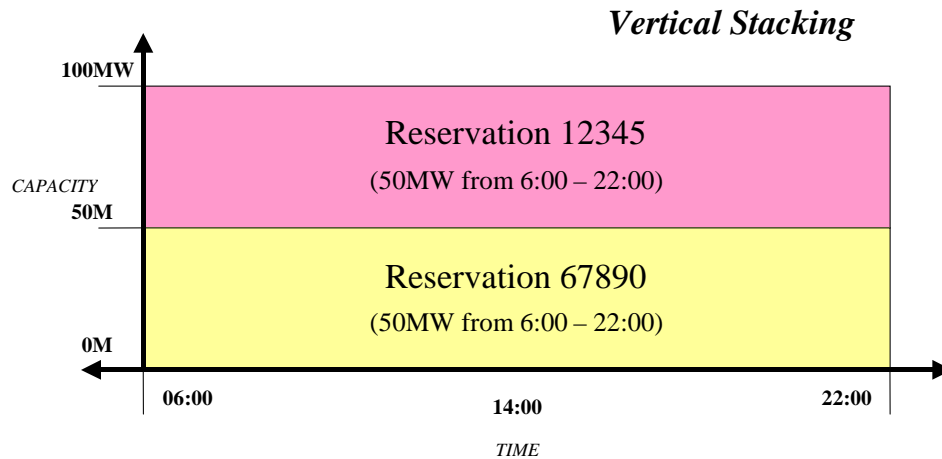
- 2.1.2.6.** Miscellaneous Information (Correctable) – information provided at the Requesting PSE's option regarding the transaction.
- 2.1.2.7.** POR and POD Profiles (Required) – schedule of Energy Flow imported at the Point of Receipt and exported at the Point of Delivery.
- 2.1.2.8.** Transmission Reservation Number(s) (Required) (Correctable) – reference to a particular transmission reservation being used to provide transmission capacity to support the transaction being described.
- 2.1.2.9.** Transmission Product (Required) (Correctable) – Specifies the firmness of service associated with the transmission reservation being used.
- 2.1.2.10.** Requesting PSE (Required) (Correctable) – identifies the entity that purchased and holds the transmission reservation being presented for use.
- 2.1.2.11.** Transmission Allocation Profile (Required) – profile of transmission reservation allocated by the Requesting Purchasing-Selling Entity for use for this Transaction.
- 2.1.3.** Load (Required) – set of data describing the physical and contractual characteristics of the energy sink.
  - 2.1.3.1.** Sink (Required) – the physical point at which the energy is being consumed. This may vary in granularity, dependent on local business practices.
  - 2.1.3.2.** Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Load Serving Entity and the distribution provider.
  - 2.1.3.3.** Miscellaneous Information (Correctable) – information provided at the requesting PSE's option regarding the Transaction.
  - 2.1.3.4.** Energy Profile (Required) – energy to be consumed by the load for this Transaction.

**[Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction](#)**

[The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:](#)

- [Vertical stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain net level of transmission capacity, and](#)
- [Horizontal stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain transmission capacity coverage over time.](#)

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their INTERCHANGE TRANSACTION, they must understand the following requirements:

- Stacks MUST be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the TRANSACTION'S energy flow.

## **B. Curtailments and Reloads (Reliability Related Profile Modifications)**

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Curtailments and Reloads are special kinds of modifications to an Interchange transaction's energy profile based on reliability concerns. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the transaction request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The TRANSACTION being curtailed or reloaded,
- All necessary profile changes to set the maximum flow allowed for the transaction during the appropriate hours,
- A contact person that initiated the curtailment or reload, and
- A description of the necessity for the schedule change.

## **C. Market-Related Profile Modifications**

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Profile Modifications are changes to an Interchange TRANSACTION'S energy profile based on market desires. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the Interchange TRANSACTION request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The Interchange TRANSACTION being modified,
- All necessary profile changes to set the transmission capacity or energy flow to the desired levels during the appropriate hours, and
- A contact person that initiated the modification.

## **D. Transmission Stacking**

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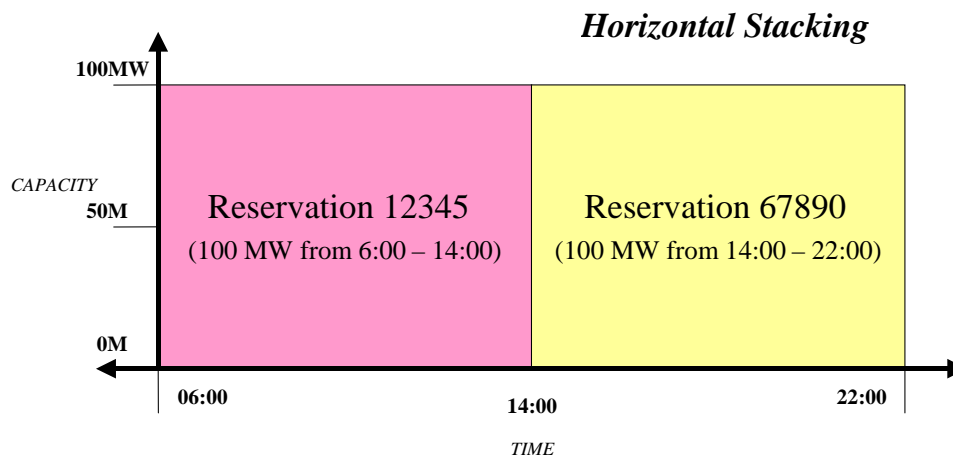
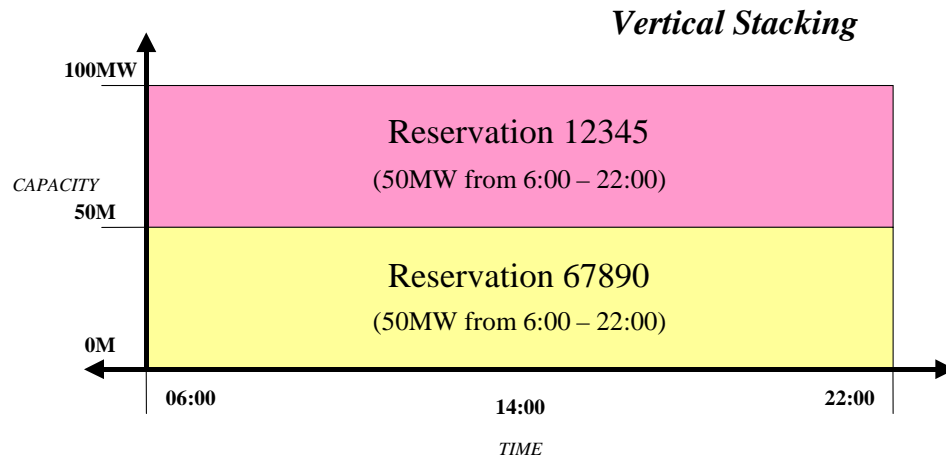
### **Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction**

The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:

- Vertical stacking, in which a Requesting PSE combines multiple reservations to achieve a certain net level of transmission capacity, and
- Horizontal stacking, in which a Requesting PSE combines multiple reservations to achieve a certain transmission capacity coverage over time.

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The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their Interchange Transaction, they must understand the following requirements:

- Stacks MUST be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the Transaction's energy flow.

## 004-D Appendix D – Commercial Timing Tables

### Timing Requirements for all Interconnections except WECC

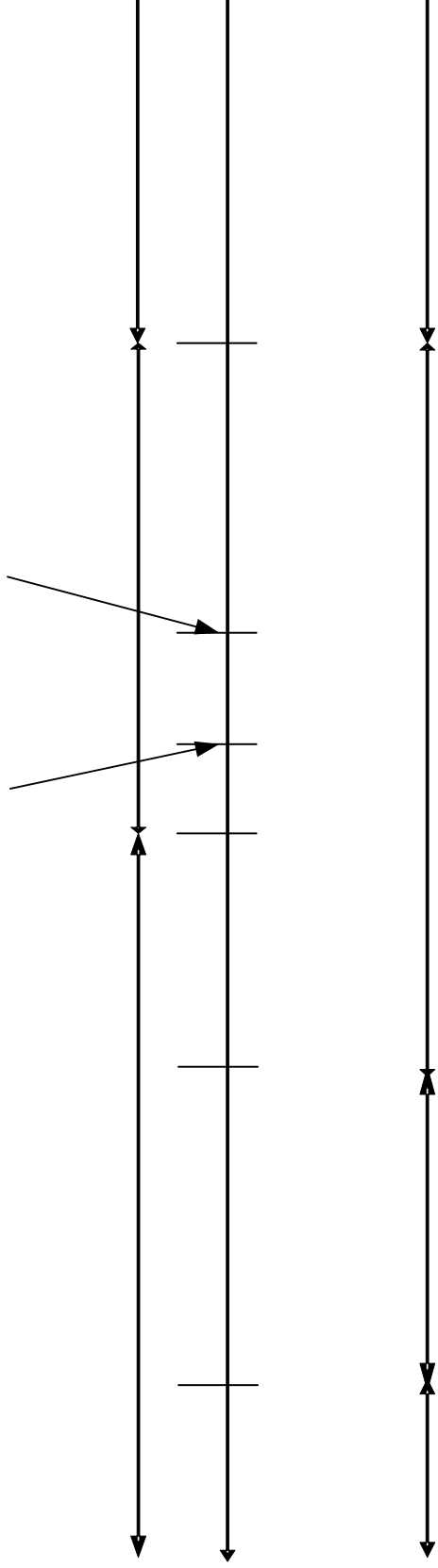
	A	B	C	D
If Actual Arranged Interchange (RFI) <sup>1</sup> is Submitted	IA Assigned Time Classification	GPE, LSE, and PSE <sup>2</sup> Conduct Market Assessments <sup>3</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
> 1 hour after the RFI start time	<u>After-the-Fact</u>	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
< 15 minutes prior to ramp start and ≤ 1 hour after the RFI start time	<u>Late</u>	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
< 1 hour and ≥ 15 minutes prior to ramp start	<u>On-time</u>	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥ 1 hour and < 4 hours prior to ramp start	<u>On-time</u>	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	<u>On-time</u>	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

1 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

2 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

3 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for all Interconnections except WECC



Time

On Time

Classification

RFI submit time  
relative to start  
time

5:55

4 hours  
before  
ramp start

8:55

1 hour  
before  
ramp start

Timing Requirements for WECC

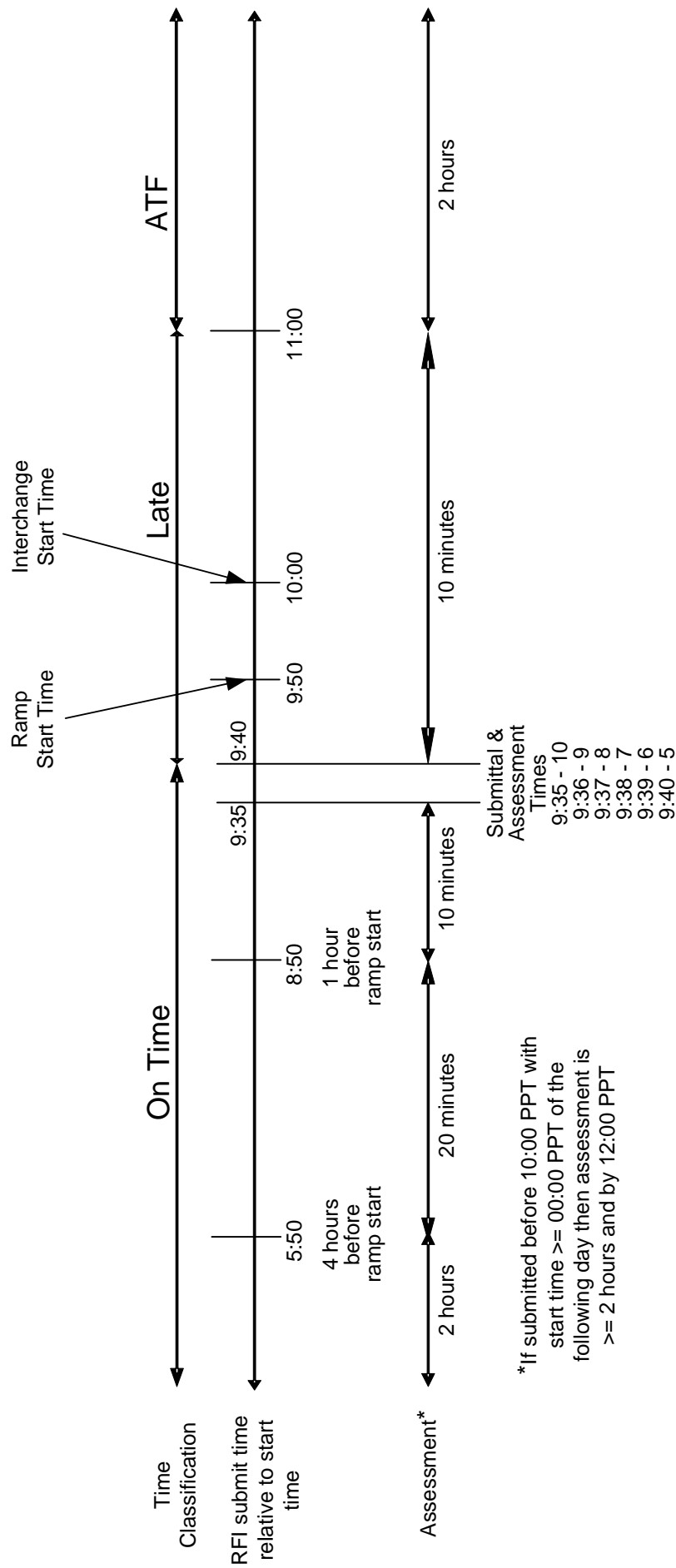
	A	B	C	D
	IA Assigns Time Classification	GPE, LSE, and PSE <sup>5</sup> Conduct Market Assessments <sup>6</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
If Actual Arranged Interchange (RFI) <sup>4</sup> is Submitted	IA Makes Initial Distribution of Arranged Interchange			
>1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
<10 minutes prior to ramp start and <1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
10 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 5 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
11 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 6 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
12 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 7 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
13 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 8 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
14 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 9 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
<1 hour and ≥ 15 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥1 hour and < 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start
Submitted before 10:00 PPT with start time ≥ 00:00 PPT of following day	≤ 1 minute from RFI submission	By 12:00 PPT of day the Arranged Interchange was received by the IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

4 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

5 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

6 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for WECC



Comments Submitted by E. Skiba, WEQ SRS

**FORMAL COMMENTS**

**Quadrant:** Wholesale Electric Quadrant  
**Recommendation:** WEQ 2009 AP Item (1.a) R05020; WEQ 2009 AP Item (3.a.vii)  
Coordinate Interchange WEQ-004  
**Submitted By:** Standards Review Subcommittee  
**Date:** October 8, 2009

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Under the Standards Review Subcommittee (SRS) Scope of Work, which was approved by the SRS on March 6, 2008, the SRS agreed to review recommendations and if subcommittee deemed appropriate, they would submit advisory comment to the Executive Committee for consideration. As stated in the Scope of Work these comments are “not intended to change the scope of the Business Practices or recommendation, but to provide consistency and uniformity across all WEQ Business Practices.”

The SRS is requesting the Executive Committee consider the following advisory comment in their review of this recommendation.

- In section 004-18.1 delete the word “the” as noted below.

004-18.1 ~~The~~ Until other means for submitting the RFI are adopted by NAESB, the following data fields shall be specified in each e-Tag requesting the use of the Transmission Service Provider’s CBM:

- The e-Tag transaction type shall be EMERGENCY.
  - The Transmission PSE (TPSE) listed in the physical segment where CBM is being requested shall be the registered Entity Code of the Load Serving Entity requesting use of CBM. Note that this is not necessarily the PSE submitting the e-Tag.
  - The Transmission Product associated with the Transmission Service Provider whose use of CBM is being requested shall be 7-CB.
- Apply the changes as noted below to Appendix A Section B Participating Entities:
    - **E-Tag Authority Service Entity** – The entity that provides the Interchange Authority service for an e-Tag. The E-Tag Authority service itself is typically a computer system that maintains the master database for the tag and communicates status with other computer systems. The E-Tag Authority Service Entity is the utility industry entity that is responsible for providing the service. ~~In the Electric Industry Registrye-Tag 1.8, and~~ this entity’s URL is specified by the Sink Balancing Authority.
    - **Approval Entity** – a period needs to be added at the end of the sentence.

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

Entergy Comments - 10-08-09

In addition to the comments below we also note that:

- there seems to be several locations where capitalization of “e-Tag” and “E-Tag Authority” are not used consistently., and
- there may be several locations where the term “Internet” may need to be capitalized, or not, depending on use.

Thank you.

Ed Davis

**WEQ-000 Acronyms and Definitions**

<b><u>TERM</u></b>	<b><u>DEFINITION</u></b>
<u>Straddle Ramp</u>	<u>Ramp that divides the start ramp duration equally across the profile block start or end time.</u>

**WEQ-004 Coordinate Interchange**

**Introduction**

Incorporate necessary revisions to the approved NAESB Coordinate Interchange Business Practice (R03013) to include added definitions, Industry transformation from Reliability Authority (RA) to the Reliability Coordinator (RC), and improvements to certain requirements of the Standard to ensure it is “lock-step” with the NERC Coordinate Interchange Standard. Coordinate Interchange standards establish the Interchange Transaction requirements for coordination of the commercial arrangements, and to complement the NERC reliability standards.

**Applicability**

The Coordinate Interchange business practice standards are applicable to: Balancing Authority (BA), Reliability Coordinator (RC), Interchange Authority (IA), Transmission Service Provider (TSP), Purchasing-Selling Entity (PSE), Generator-Provider Entity (GPE), Load-Serving Entity (LSE), and any Transmission Purchasing-Selling Entity whose transmission approval rights are cited (TPSE).

**Definition of Terms - Reserved**

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- ~~004-0.1 — **Approval Entity** — An entity that has approval rights for an Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE), and the Load-Serving Entity (LSE) that are included in the Arranged Interchange, as well as any Purchasing-Selling Entity (PSE) whose transmission rights are cited (TPSE) in the Arranged Interchange.~~
- ~~004-0.2 — **Arranged Interchange** — The state where the Interchange Authority has received the Interchange information (initial or revised).~~
- ~~004-0.3 — **Balancing Authority (BA)** — The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real-time.~~
- ~~004-0.4 — **Balancing Authority Area (BAA)** — The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.~~
- ~~004-0.5 — **Confirmed Interchange** — The state where the Interchange Authority has verified the Arranged Interchange.~~
- ~~004-0.6 — **Curtailment** — A reduction in the scheduled capacity or energy delivery of an Interchange transaction.~~
- ~~004-0.7 — **Generator-Providing Entity (GPE)** — The Purchasing-Selling Entity who is responsible for providing the source generation from owned, affiliated, or contractually bound generation.~~
- ~~004-0.8 — **Implemented Interchange** — The state where the Balancing Authority enters the Confirmed Interchange into its Area Control Error equation.~~
- ~~004-0.9 — **Interchange** — Energy transfers that cross Balancing Authority boundaries.~~
- ~~004-0.10 — **Interchange Authority (IA)** — The responsible entity that authorizes implementation of valid and balanced Interchange schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.~~
- ~~004-0.11 — **Interchange Block Accounting** — Energy accounting that assumes a beginning and ending ramp time of zero minutes. For accounting purposes, this moves the energy associated with the starting and ending ramps into the adjacent starting and ending clock time of the Interchange.~~
- ~~004-0.12 — **Interconnected Operations Service** — A service (exclusive of basic energy and transmission services) that is required to support the reliable operation of the interconnected bulk electric systems.~~
- ~~004-0.13 — **Load-Serving Entity (LSE)** — The responsible entity that secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.~~

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- ~~004-0.14 — **Market Assembly** — The function responsible for coordinating the submittal of a completed and accurate Arranged Interchange from the Requesting Purchasing-Selling Entity to the Interchange Authority within an organized Market.~~
- ~~004-0.15 — **Market Period** — The period of time beginning with the Requesting Purchasing-Selling Entity (PSE), or its designee, making required purchase, sale, and transmission service arrangements to support the Arranged Interchange through the period of time when the Interchange Authority receives the Arranged Interchange.~~
- ~~004-0.16 — **Purchasing-Selling Entity (PSE)** — The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.~~
- ~~004-0.17 — **Reliability Coordinator (RC)** — The entity with the highest level of authority that has responsibility for the reliable operation of the bulk electric system, has the wide area view of the bulk electric system, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of interconnection reliability operating limits, which may be based on the operating parameters of transmission systems beyond any transmission operator's vision.~~
- ~~004-0.18 — **Reliability Period** — The period of time beginning with the Interchange Authority (IA) requesting approvals from the reliability Approval Entities through the completion of the physical flow of the energy associated with the originally submitted Arranged Interchange.~~
- ~~004-0.19 — **Request For Interchange (RFI)** — A collection of required data, as defined in Appendix C of this standard, necessary for the purpose of submitting to the Interchange Authority as an Arranged Interchange.~~
- ~~004-0.20 — **Requesting Purchasing-Selling Entity (PSE)** — The entity that prepares and submits the Request For Interchange (RFI) to the Interchange Authority (IA) and holds the transmission reservation being presented for use.~~
- ~~004-0.21 — **Sink Balancing Authority** — The Balancing Authority in which the load (sink) is located for an Interchange Transaction.~~
- ~~004-0.22 — **Source Balancing Authority** — The Balancing Authority in which the generation (source) is located for an Interchange Transaction.~~

**Business Practice Requirements**

- 004-1** All requests to implement bilateral Interchange (excluding Interchange for emergency energy) between a Source Balancing Authority and a Sink Balancing Authority, where alone or both Balancing Authority is Authorities are

Comments Submitted by E. Davis, Entergy

NAESB WEQ Coordinate Interchange Standards – WEQ-004

located in either the Eastern or Western Interconnection, shall be accomplished by the submission of a completed and accurate Request For Interchange (RFI) ~~to the Interchange Authority (IA).~~

**004-1.1** To the extent that Intra BA transactions are submitted as a Request for Interchange (RFI), those transactions will be subject to all provisions of this standard.

**004-1.2** RESERVED

**004-1.3** RESERVED

**004-1.4** RESERVED

**004-1.5** RESERVED

**004-1.6** RESERVED

**004-2** Until other means are adopted by NAESB, the primary method of submitting the Request For Interchange (RFI) ~~to the Interchange Authority~~ shall be ~~anby the~~ e-Tag, ~~using protocols compliant and in accordance~~ with the Version 1.8.1 Electronic Tagging Functional Specification, Version 1.8.-

**004-2.1** A backup or redundant electronic system shall be available for immediate use should the primary electronic means become disabled, ~~as documented in~~ Appendix A “Electronic Tagging Service Performance Requirements and Failure Procedures”.

**004-2.2** RESERVED

**004-3** Arranged Interchange that crosses Interconnection Boundaries (Eastern, Western, HQ (TransEnergie) or ERCOT) shall be subject to the submittal and approval timing requirements associated with the most restrictive interconnection involved in the Interchange.

**004-3.1** For Interchange where the sink is in the Western Interconnection for same day transactions, the last Purchasing-Selling Entity before the DC Tie in the Eastern Interconnection shall be responsible for submitting the e-Tag.

**004-4** ~~In the event of e-Tag system component failure, the requirements and procedures contained within Appendix A “Electronic Tagging Service Performance Requirements and Failure Procedures” shall be followed.~~ RESERVED

**004-4.1** RESERVED

**004-4.2** RESERVED

Comments Submitted by E. Davis, Entergy

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- 004-5** It shall be the responsibility of the ~~load serving Purchasing-Selling Entity (PSE)~~LSE, or its designee, to ensure the completed and accurate ~~Request For Interchange (RFI)~~ Request For Interchange (RFI) contains, at a minimum, the information specified in Appendix C “~~RequiredData Submission~~ RequiredData Submission and ~~Correctable Tag DataModifications~~ Correctable Tag DataModifications”.
- 004-6** Approval Entities shall only be allowed to take actions against an Arranged Interchange as specified in Appendix B “~~Interchange~~Transaction e-Tag Actions”.
- 004-6.1** Prior to the expiration of the market assessment period defined in the Appendix D, “Commercial Timing Tables”, Column B, the TPSE, LSE, and GPE may respond to a request from the Interchange Authority to transition an Arranged Interchange to a Confirmed Interchange. ~~Note: The TPSE, LSE, and GPE have optional approval rights. If the TPSE, LSE, or GPE does not respond, these rights will be treated as if approved. In addition, if the TPSE, LSE, or GPE is also the PSE creating the tag, these rights will be treated as approved.~~
- 004-6.1.1** Each TPSE, LSE, and GPE shall assess the Arranged Interchange for completeness and accuracy of the information contained in the Arranged Interchange.
- 004-6.1.2** If the TPSE, LSE, and/or GPE ~~dedoes~~ does not respond to ~~a request from an RFI~~ a request from an RFI, the ~~Interchange Authority, the Arranged~~ Interchange is considered passively approved by that entity.
- 004-6.1.3 If the TPSE, LSE, or GPE is also the PSE creating the e-Tag, Arranged Interchange will be considered approved by that entity.
- 004-6.2** RESERVED
- 004-7** ~~All information on energy purchase, energy sale, and transmission service arrangements required for the RFI shall be performed prior to being submitted to the IA. RESERVED~~
- ~~At its discretion, the Requesting Purchasing-Selling Entity may defer this responsibility to the Market Assembly function.~~
- 004-7.1** RESERVED
- 004-8** **EASTERN AND WESTERN INTERCONNECTION TIMING REQUIREMENTS:**
- 004-8.1** ~~The completed and accurate Request for Interchange (RFI), or modification to a modified~~ Arranged Interchange submitted to the Interchange Authority shall be subject to the timing requirements contained in this standard under Appendix D “Commercial Timing Table.”
- 004-8.1 RESERVED
- 004-8.2 ~~Transactions that cross interconnection boundaries involving ERCOT shall follow the timing requirements contained within this Standard. RESERVED~~

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**004-8.3** RESERVED

**004-9** All denials of Arranged Interchange by an Approval Entity during the assessment period (reliability and market) shall be accompanied by the reason for such denial and communicated to the Interchange Authority and by the Interchange Authority to the Requesting ~~Purchasing-Selling Entity~~PSE.

**004-10** Any changes to the status of the Arranged, Confirmed, or Implemented Interchange shall be communicated by the Interchange Authority to all involved parties ~~of listed on the Interchange, such as Balancing Authorities, Reliability Coordinators, Generator-Providing Entity, Load-Serving Entity, and Transmission Service Provider~~se-Tag.

**004-11** The Requesting PSE shall have the right to request modifications to the Arranged, Confirmed or Implemented Interchange for non-reliability related issues according to the timing requirements in Appendix D ~~set forth in this Standard. For Implemented Interchange, only "future" hours may be modified.~~  
"Commercial Timing Table".

**004-11.1** The Requesting PSE can request to increase or decrease the energy level or the committed transmission(s) profile of an Arranged, Confirmed or Implemented Interchange. ~~For Implemented Interchange, only "future" hours may be modified.~~  
a) ~~In the case of an increase in the energy level, the Requesting PSE must provide and modify the necessary transmission capacity to cover the increased energy flow.~~

**004-11.2** The Requesting PSE shall have the right to request an extension to the Arranged, Confirmed or Implemented Interchange energy profile prior to completion to reflect a desire to flow energy during hours not previously specified.

**004-11.2.1** ~~The Requesting PSE must provide the necessary transmission capacity with the extension.~~

RESERVED

**004-11.3** If the modification is denied by any Approval Entity, the previous ~~confirmed~~Confirmed or Implemented Interchange remains valid, including the duration period.

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**004-11.4** The Requesting PSE shall submit a transmission capacity profile that is greater than or equal to the energy profile.

**004-12** All parties involved in the Arranged Interchange shall have, or arrange to have, ~~personnel and facilities on site and immediately~~resources available ~~for~~to process notification of changes to the Arranged Interchange from the beginning of the Market Period through the time when the energy flow of the Implemented Interchange has been completed.

**004-13** Unless provided for under a FERC-approved market mechanism, energy accounting for all Interchange Transactions shall be accomplished via Interchange Block Accounting.

**004-14** Settlement of losses shall be ~~either handled~~designated as financial or as payment in-kind in accordance with the Transmission Service Provider tariff and posted business practices.

**004-14.1** For losses ~~handled~~designated as payment in-kind, ~~the~~returned concurrently, ~~the requesting~~ PSE, ~~or its designee,~~ shall ~~communicate to~~designate in the ~~IA,~~ via Arranged Interchange RFI the amount of MW losses and the entity that should receive them along the Interchange path.

**004-15** All Reliability Coordinators, Balancing Authorities, Transmission Service Providers, Generator-Providing Entity, Load-Serving Entity, and other entities involved in an Interchange request shall not disclose the Interchange Transaction information to any ~~PSE~~entity not involved in the Interchange ~~transaction~~Transaction.

**004-16** ~~After a curtailment of Interchange has ended, the Sink Balancing Authority shall return the Interchange profile to the previous level, unless otherwise specified by the entity submitting the Request For Interchange.~~

RESERVED

**004-17** ~~Default~~All ramps shall be Straddle Ramps. Instantaneous ramps are indicated by a zero minute ramp duration. Ramp durations are specified in minutes. The ramp start is calculated by dividing the ramp duration by two and subtracting this quantity from the profile block start time. The ramp end time is calculated by dividing the ramp duration by two and adding this quantity to the profile block start time. The final profile block implies a ramp down to zero starting at one-half the end ramp duration subtracted from block end time and continuing to one-half the end ramp duration added to the block end time. The ramp start and stop times represent minutes over which generation will increase or decrease from the previous block level to the current block level.

Ramp durations of any value may be specified in a RFI and must be agreed to by all parties with approval rights involved in the RFI.

If no ramp duration is included on the e-Tag for the North American Interconnection~~Interconnections~~ the default ramp duration shall be as follows:

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**004-17.1** ~~Default ramp duration for the Eastern Interconnection shall be 10 minutes equally across the start and end times of the Implemented Interchange (i.e., 5 minutes before start and 5 minutes after the end time of the implemented Interchange) unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

**004-17.2** ~~**004-17.2**—Default ramp duration for the Western Interconnection shall be 20 minutes equally across the top of the hour (i.e., 10~~

~~**004-17.3** The default ramp that crosses the Eastern and Western Interconnections shall be 20 minutes before start and 10 minutes after the end time of the Implemented Interchange) of the Implemented Interchange unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

**Coordinate Interchange for Capacity Benefit Margin**

004-18\_ All scheduled use of a Transmission [Service](#) Provider's transmission capacity set-aside for Capacity Benefit Margin (CBM) in support of energy imports into a load Balancing Authority [Area](#) served by the Transmission [Service](#) Provider shall be uniquely represented in all [RFI](#) submitted to the IA.

004-18.1 ~~The~~ Until other means for submitting the RFI are adopted by NAESB, the following data fields shall be specified in each e-Tag requesting the use of the Transmission [Service](#) Provider's CBM:

- The e-Tag transaction type shall be EMERGENCY\_.
- The Transmission PSE (TPSE) listed in the physical segment where CBM is being requested shall be the registered Entity Code of the Load Serving Entity requesting use of CBM. Note that this is not necessarily the PSE submitting the e-Tag.
- The Transmission Product associated with the Transmission [Service](#) Provider whose [use of](#) CBM is being requested shall be 7-CB\_.

004-18.2 The Transmission [Service](#) Provider may require the specification of a unique Transmission Reservation Number in association with any request for use of CBM. Such requirement shall be fully documented in the Transmission [Service](#) Provider's Business Practices posted on OASIS. The [Transmission Service Provider](#) reserves the right to deny any RFI requesting use of CBM if the required Transmission Reservation Number is not specified.

004-19 MW values specified in Interchange Transactions must be integrated into MWh values across various time intervals. Interchange Transactions that start or stop within an hour may result in fractional MWh values being calculated for the period. Additionally, these values may be used to calculate totals for longer periods (such as a portion of a day, whole day, week, month, etc). These total numbers may vary depending on the method used to perform the calculation. In order to ensure consistent treatment across the industry where whole MWh values are used, the following calculation guidelines shall be followed:

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004-19.1 For time periods of an hour or less, MWh values shall be rounded to the nearest whole MWh (< .50 down, >= .50 up) for each time interval.

004-19.2 For time periods of an hour or more (e.g. a day, a week, the off-peak hours for a day, etc.), calculate and round the MWh values for each individual hour within the time period, then sum the hourly results to get the MWh value for the whole time period.

## 004-A Appendix A – Electronic Tagging Service Performance Requirements and Failure Procedures

This ~~document~~[appendix](#) describes the performance requirements of the e-Tag ~~System~~[system](#) and the procedures to be followed in the event of an e-Tag ~~System~~[system](#) component's failure. Due to the importance of accurate information flow, these procedures and requirements have been developed to ensure that reliable data communications remain available at all times.

### A. Performance Requirements

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#### ***e-Tag Agent Service Requirements***

Entities that are required to use e-Tag ~~agent services~~[Agent Services](#) are responsible for obtaining an e-Tag ~~agent service~~[Agent Service](#) in order to conduct business; there are no exemptions to this requirement. There is no specific requirement against which performance should be measured. However, in cases of e-Tag ~~agent service~~[Agent Service](#) failure, non-receipt of critical information (such as curtailment notifications, transaction denials, and schedule modifications) due to performance problems shall be the responsibility of the e-Tag ~~agent~~[Agent Service](#) user.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the e-Tag ~~agent~~[Agent Service](#) user is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

#### ***e-Tag Approval Services***

Entities that are required to employ e-Tag ~~approval services~~[Approval Services](#) are responsible for providing an e-Tag ~~approval service~~[Approval Service](#) as well as providing a level of redundancy; there are no exemptions from this requirement. At a minimum, e-Tag ~~approval services~~[Approval Services](#) may not have greater than 1.0% of the e-Tags sent to their system within a calendar month be determined by the ~~Interchange e-Tag~~[Authority Service](#) as having a state of "COMM\_FAIL." While there is no specific level of redundancy that is required by this ~~Appendix~~[appendix](#), sufficient redundancy must be in place that the entity is confident of achieving this standard.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the entity required to employ the e-Tag ~~approval service~~[Approval Service](#) is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

In order to monitor compliance with this requirement, the Balancing Authorities will arrange with their ~~e-Tag~~[Authority Services](#) to generate compliance reports at the beginning of each month determining this metric for the previous month ~~on a Provider-by-Provider basis~~. These ~~results should be reports shall be~~ available for ~~investigation of any violations, and the results of this investigation may be posted once finalized~~[five years](#).

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~~**Interchange e-Tag Authority (IA) Services**~~

~~**Service**~~

As the ~~Interchange e-Tag Authority~~ ~~service~~~~Service~~ is the most critical element of the e-Tag system, it must meet much higher standards. ~~These standards can be divided into two areas: Implementation, and Policies and Performance.~~

~~**Implementation**~~

~~Interchange Authority services must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, an Interchange Authority service must provide, at a minimum, the following:~~

- ~~• Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);~~
- ~~• Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);~~
- ~~• Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc...).~~

~~— Providers of Interchange Authority services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.~~

~~*Policies and Performance*~~

The following shall be required of all ~~Interchange e-Tag~~ Authority ~~services~~~~Services~~:

- ~~• All scheduled outages ~~must~~~~should~~ be performed between the hours of 01:00 CST and 04:00 CST. Any maintenance that must be performed outside this three hour window must be accomplished through the use of redundant systems in such a manner that no outage is visible;~~
- ~~• Notice of ~~Scheduled~~~~scheduled~~ outages must be given to the public ~~at least~~ 24 hours before the outage is to occur. ~~Notice shall be deemed valid if the following actions have been taken:~~~~
- ~~1. • Users of the system are sent notifications, ~~by the e-Tag Authority Service or designated third party~~ via email or ~~via~~ a proprietary system, time stamped at least 24 hours prior to the outage;~~
- ~~2. • The TISFORUM mailing list is sent Email notification time stamped at least 24 hours prior to the outage;~~
- ~~3. • The OASIS TSIN mailing list is sent email notification time stamped at least 24 hours prior to the outage.~~

~~Any system problem that creates behavior contrary to that described in the e-Tag specification shall constitute an "unscheduled outage." For example, a system that begins rejecting every third message it receives due to a component failure~~

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~~in a cluster would constitute an unscheduled outage (although the system was only failing one third of the time, it was not performing as described in the e-Tag specification).~~

- ~~Interchange Authority services may~~ Services shall not be in a state of scheduled or unscheduled outage for more than 0.5% of the time for the month, based on outage time (in minutes) for the month divided by total time in the month (in minutes). ~~Specific allowed outages may be granted to address special circumstances (i.e., scheduled specification changes, major internet outages, etc...). These specific allowed outages, if granted, may require public posting for all customers to view~~

Any system problem that creates behavior contrary to that described in the Version 1.8.1 Electronic Tagging Functional Specification shall constitute an unscheduled outage. For example, a system that begins rejecting every third message it receives due to a component failure in a cluster would constitute an unscheduled outage.

While it is acceptable for an entity to contract with a third-party to provide for these requirements, it should be understood that the entity required to employ the ~~Interchange~~E-Tag Authority ~~service~~Service is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

To monitor compliance with these requirements, ~~the responsible the Operator of an Interchange Authority system may be required~~Balancing Authority will require its e-Tag Authority Service to submit, at the beginning of each month, a report describing outage activity for the previous month. This report shall consist of the following items:

1. The beginning of the outage;
2. The ending of the outage;
3. The type of outage (Scheduled or Unscheduled);
4. The nature of the outage (Maintenance, System Crash, etc...);
5. In the event of an Unscheduled Outage, the cause of the outage and the steps taken to ensure the problem has been addressed and will not reoccur.

~~The report format may be in a standardized electronic form. These documents may be evaluated and held in confidence. Statistics may be developed from these reports identifying system outage durations for each month. These preliminary findings will be held in confidence until they are confirmed. These performance percentages shall be posted and electronically accessible once confirmed, at the end of the month following the month evaluated. available for five years.~~

~~Entities experiencing difficulty due to an unnoticed scheduled or unscheduled outage may send a Request for Investigation. This request should specify the estimated time the outage occurred, the estimated time the outage ended, and document evidence of the outage (such as TMP logs, email messages, etc...). Claims may be investigated with the appropriate Tag Authority Service Operator. Should a Tag Authority Service Operator be unable to refute the claim, and the Investigation Requestor appears to have provided an accurate representation of~~

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~~an undocumented outage, calculated outage percentages may be modified to include the undocumented incident.~~

### **B. Failure Procedures**

Backup procedures are needed because, in a communication system that operates on the public Internet, failures are certain to occur. The failures may be caused as a result of overload of the network, loss of connection to an Internet Service Provider, corruption of one or more servers by computer hackers, failure of one or more entity's Internet servers, internal firewall failure, and many other reasons.

Failures also have a wide variety of scopes. A failure may affect a single entity with a small number of schedules ~~while all of its neighbors continue to operate normally~~, a small number of utilities in a local area, or a regional RTO with thousands of active schedules. However failures occur, the operation of the electric utility grid must continue. This document describes the manner in which operations are to be coordinated should such a failure become a reality.

#### **Assumptions**

A general assumption is that each operational entity in the electric utility industry has an internal energy management system, marketing system, or contract system that will not be affected by the Internet communication failure.

#### **Participating Entities**

**Requesting PSE** - The entity that prepares and submits an RFI, normally a Purchasing Selling Entity.

**Path Participant** – Any of the entities that are part of an Interchange transaction.

**InterchangeE-Tag Authority Service Entity** – The entity that provides the Interchange Authority service for an e-Tag. The [InterchangeE-Tag](#) Authority service itself is typically a computer system that maintains the master database for the tag and communicates status with other computer systems. The [InterchangeE-Tag](#) Authority Service Entity is the utility industry entity that is responsible for providing the service. In [the Electric Industry Registry e-Tag 1.8](#), this entity's [URL](#) is [specified by](#) the Sink Balancing Authority.

**Approval Entity** – An entity that has approval rights for Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE) and the Load-Serving Entity (LSE) involved in the Arranged Interchange

**Checkout Partners** – The entities that perform the checkout process; ~~most~~ commonly two adjacent Balancing Authorities checking net interchange. It might also be two marketers checking sales and purchases, or a transmission customer checking schedules with a transmission provider.

#### **Failure Actions**

When a failure occurs, an entity will soon realize that it has lost communications with the other servers in the electronic tagging arena. Yet it must still communicate current energy flows across the transmission network and expected flows for the next few hours. Transmission curtailments must be accounted for in the sense that a required reduction in energy flows or increase in generation needs to be communicated. However, accounting issues will take

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a secondary priority to reliability issues in this exchange, and detail relating back to tags, schedules, and transmission reservations can be reconstructed later.

### E-Tag Authority Failure Actions

When a failure occurs at the level of E-Tag Authority, the effects will trickle down to not only to all of the users of that Authority, but also to any participating entity wishing to submit a RFI with a user of the failed E-Tag Authority. While reliability will be the focus during this time, the following procedures shall be used until functionality returns to the E-Tag Authority.

1. Reliability entities will adhere to all currently Implemented schedules as communicated to them prior to the E-Tag Authority outage. This will continue until the outage ends or to 4-hours from the beginning of the outage, whichever occurs sooner.
2. As the E-Tag Authority service is down, E-Tags will not be created via that service until operation is reinstated. Subsequently, any tags made via a different E-Tag Authority entity will not be able to communicate to the downed entity and therefore, no transactions with approval entities that use the downed E-Tag Authority service will be approved.
3. The Interchange Authority will broadcast a message by email and/or electronic messaging systems to all entities within its authority service. The message should forecast a recovery time for the E-Tag service. In the meantime, the E-Tag Authority Service is down.
4. Reliability Coordinators must contact the sink Balancing Authority via phone to communicate changes to schedules due to TLR curtailments, reloads or any other reliability change.
5. The Interchange Authority will communicate [HOW?] any reliability changes to other reliability entities within the E-Tag's physical contract path, including the source Balancing Authority, transmission providers and any applicable scheduling entities.
6. Interconnecting Balancing Authorities will continue to verify Net Scheduled Interchange prior to each operating hour.
7. If 4-hours from the original outage time have passed, Requesting PSEs may submit paper copies of the RFI via FAX to the Interchange Authority, excluding the WECC. For the WECC, the only acceptable mechanism for creating a Request For Interchange is creation of a new E-Tag Request.
8. The Interchange Authority will evaluate the paper RFI and will collect the approvals for all valid requests from each Reliability entity, including the source Balancing Authority, transmission providers and any applicable scheduling entities. The IA will communicate the final approval status to all entities. All entities must approve the transaction before being included in any entity's Net Scheduled Interchange.
9. After the outage is complete, each entity will take steps to ensure proper accounting adherence for all applicable approved transactions.

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**Singular Failure Actions**

The table below lists typical failures that might occur and the emergency actions that the entity will take to compensate for that failure.

<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup <u>A</u>ctions</b>
Requesting PSE	Unable to submit tag to <a href="#">Interchange E-Tag</a> Authority Service.	Ask another entity in the transaction chain to submit the schedule for you. That entity then becomes the author.  For Interconnections, excluding the WECC, create a backup paper copy of the schedule and fax to authority service entity and all approval entities in the transaction. For the WECC, the only acceptable mechanism for creating an <a href="#">an-a</a> Request For Interchange is creation of a new e-Tag Request.
Path Participant	Not receiving update messages.	Use Recovery Process to resynchronize from authority service.  Use telephone with Authority Service Entity to update status.
Interchange Authority Service Entity	Unable to send messages to generation or load Balancing Authorities.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity for these control areas.  Telephone Approval Entity to notify of the message failure.  Approve or deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an Approval Entity for an intermediate Transmission Provider or Balancing Area.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity.  Telephone Approval Entity to notify of the message failure.  Approve the schedule automatically.  Deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an information only entity.	No Action required.
<a href="#">Interchange Authority Service Entity</a>	<a href="#">Unable to receive messages.</a>	<a href="#">Broadcast a message by email or fax to all entities that use your authority service. The message should forecast a recovery time for your service. In the meantime, your Interchange Authority Service is down.</a>

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<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup Actions</b>
Approval Entity	Unable to receive messages from an authority service.  (The Authority has an obligation to notify you and the authorizing PSE.  The Authoring PSE has an obligation to fax the tag to the approver.)	Use the Recovery Process to resynchronize from Authority Services or Central Repository.  Telephone the Authority Service entity with the approval or denial of the schedule.
Approval Entity	Unable to send messages to an authority service.	Telephone the Interchange Authority Service Entity with approval or denial of the schedule.
Checkout Partner	Unable to exchange messages.	Telephone net exchange to the checkout partner.  Create a backup paper copy of the checkout data and fax to the checkout partner.

**Notes:**

1. The first action in every case is to attempt to establish connection by using an alternate communication method, a second Internet Service Provider, dial up connection, or a private network if one is available.
2. Next, the backup actions are attempted in the order specified.
3. The backup actions include printing paper reports from the internal energy management system. The reports include a schedule detail report for a short time period, net exchange between two operational entities, and transmission reservation usage between a transmission provider and a customer.
4. Every backup action list ends with a fax or telephone call that is completely independent of the public Internet.

**Reports**

Three reports have been designed to communicate energy flows and transmission reservation usage between partner entities with a tie where possible back to the schedules as known before the communication failure.

**Net Exchange**

A Net Exchange report is a paper summary of Interchange:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.

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- The entity and the partner entity are any two entities that share common schedules.
- The date and time are the date and time of the report.
- Net schedules are the net of schedules from and to the other entity.
- TO is a sum of the schedules from the entity to the partner entity.
- FROM is a sum of the schedules from the partner entity to the entity.
- Tag or fragment lines represent the data from each tag or fragment that was known at the time of the failure or has been entered later.
- Recent adjustment lines represent a summary of changes to the schedules that occurred since the failure.

### ***Schedule Detail***

A Schedule Detail report is a paper copy of an individual schedule. It includes:

- The schedule identification number and most current active revision number.
- The fully expanded energy schedule for a period of the current hour to a few hours in the future, up to 24 hours.
- The complete path with all OASIS and contract references.

### ***Reservation Usage***

A transmission Reservation Usage report is a summary of Reservation Usage:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entities on the report are a transmission provider and a transmission contract holder.
- Gross reservations is the sum of reservations.
- Usage is the sum of usage.
- The detail lines are tag or fragment usage of reservation, organized by product and OASIS reservation number.

### ***Recovery Process***

The last backup issue is the recovery of current status when the communication link is reestablished. The recovery is accomplished by a query request to the Interchange Authority service for each entity that the entity does business with. The query returns a list of all the schedules that reference that entity with the schedule ID, the current version number and the last modified date and time.

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The recovering entity then compares with its own database and updates ~~his-its~~ database to be current with the Interchange Authority's database. When all Interchange Authority services have been queried, the recovery is complete.

If the entity desires, it can request a complete audit history of each schedule.

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**004-B Appendix B**

**Transaction e-Tag Actions**

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***For Eastern and Western Interconnections***

The table below explains the various e-Tag actions that are possible, and the entities that are entitled to initiate these actions:

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
Approve a Tag Request	Economic, Reliability, or Contractual	Set Status (to Approved)	Approval Entity*	Approver indicates approval
Deny a Tag Request	Economic, Reliability, or Contractual	Set Status (to Denied)	Approval Entity*	Approval indicates denial
Study a Tag Request	Economic, Reliability, or Contractual	Set Status (to Studied)	Approval Entity*	Approval indicates the tag has been viewed, but have not committed to a decision
Withdraw a Tag Request	Economic	Withdraw Request prior to request implementation	Requesting PSE**	Request is dead
Cancel a New Tag	Economic	Request Profile Change—Set Energy and Capacity for the transaction to zero prior to transaction start	Requesting PSE**	Tag is dead
Terminate a Tag	Economic	Request Profile Change—Set Energy and capacity of the transaction to zero from a point of time forward	Requesting PSE**	Portion of tag is dead
Extend an e-Tag	Economic	Request Profile Change— Append additional hours onto an existing transaction	Requesting PSE**	Tag is extended
Reduce an e-Tag	Economic	Request Profile Change— Decrease Energy flow or Committed	Requesting PSE**, Market Operator***	Profile is Decreased

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<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
		Transmission Reservation(s) for a transaction for a specific set of hours		
Increase an e-Tag	Economic	Request Profile Change—Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours	Requesting PSE**, Market Operator***	Profile is Increased
Curtail an e-Tag	Reliability (SOL Violation, Loss of Gen, loss of Load)	Request Profile Change—Limit Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator	Profile is Decreased
Reload an e-Tag	SOL Violation eliminated, Generator Returned, Load Returned	Request Profile Change—Release Limit of Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator	Profile is Increased

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Approval Needed</b>	<b>Result</b>
<a href="#">Approve a Tag Request</a>	<a href="#">Economic, Reliability, or Contractual</a>	<a href="#">Set Status (to Approved)</a>	<a href="#">Approval Entity*</a>	<a href="#">n/a</a>	<a href="#">Approver indicates approval</a>
<a href="#">Deny a Tag Request</a>	<a href="#">Economic, Reliability, or Contractual</a>	<a href="#">Set Status (to Denied)</a>	<a href="#">Approval Entity*</a>	<a href="#">n/a</a>	<a href="#">Approver indicates denial</a>
<a href="#">Study a Tag Request</a>	<a href="#">Economic, Reliability, or Contractual</a>	<a href="#">Set Status (to Studied)</a>	<a href="#">Approval Entity*</a>	<a href="#">n/a</a>	<a href="#">Approver indicates the tag has been viewed, but have not committed to a decision</a>
<a href="#">Withdraw a Tag Request</a>	<a href="#">Economic</a>	<a href="#">Withdraw Request prior to request implementation</a>	<a href="#">Requesting PSE**</a>	<a href="#">no</a>	<a href="#">Request is Withdrawn</a>
<a href="#">Cancel a New Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Set Energy and Capacity for the transaction to zero</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Tag is Cancelled</a>

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated-by</b>	<b>Result</b>	
		<a href="#">prior to transaction start</a>			
<a href="#">Terminate a Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Set Energy and Capacity of the transaction to zero from a point of time forward</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Portion of tag is Terminated</a>
<a href="#">Extend an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Append additional hours onto an existing transaction</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Request is approved and the e-Tag is extended</a>
<a href="#">Reduce an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Decrease Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***, Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Market Level Profile and/or Transmission Allocation Profile is Decreased</a>
<a href="#">Increase an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***</a>	<a href="#">yes</a>	<a href="#">Profile is Increased</a>
<a href="#">Curtail an e-Tag</a>	<a href="#">Reliability (TLR, SOL Violation, Loss of Gen, loss of Load)</a>	<a href="#">Request Profile Change – Limit Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Profile is Decreased</a>
<a href="#">Reload an e-Tag</a>	<a href="#">SOL Violation eliminated, Generator Returned, Load Returned</a>	<a href="#">Request Profile Change – Release Limit of Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator</a>	<a href="#">yes</a>	<a href="#">Profile is Increased</a>

Notes:

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

\*~~Purchasing-Selling Entities~~GPEs, LSEs, and ~~Load-Serving Entities~~TPSEs may elect to defer their approval rights to the Host Balancing Authority of their facilities. For more information, see PSE and LSE approval rights below.

\*\*In some situations, Balancing Authorities implement certain Interchange Transactions or Interchange Schedules, such as Bilateral Inadvertent Payback, Dynamic Schedules, and Emergency Sschedules from Reserve Sharing Groups. In these situations, the Balancing Authority serves as the Purchasing-Selling Entity and can perform these actions.

\*\*\*Entities registered as market operators and serving as either source or sink for a Transaction may exercise such functions in order to indicate correct flow based on market clearing.

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

\*\*\*\*With the addition of Source BA, Sink BA, Transmission Service Provider and Reliability Coordinator to the list of entities available to reduce E-Tag energy and transmission profiles, those entities will use that function for any non-reliability market operations as necessary. The curtailment option will only be used for the reliability reasons as described. The curtailment issuer should include the reason for the action in their request for the profile change.

**PSE and LSE Approval Rights**

~~Purchasing-Selling Entities providing generation-Generation Providing Entities (GPE) and~~, Load-Serving Entities (LSE), ~~and Transmission Purchasing-Selling Entities (TPSE)~~ have ~~been granted~~ the right, but not the obligation, to approve Transaction requests ~~using~~citing their resources. ~~Only GPE's who are capable of controlling the output of the source generator should be allowed~~A GPE (for Sources) or a LSE (for Sinks) can specify an alternate approval rights entity in the Master Registry. If ~~PSEs~~GPEs and LSEs specify an approval service in the Master Registry, then they are expected to approve/deny Transactions when so requested. Otherwise, their Host Balancing Authority is expected to act on their behalf. The following table illustrates the proper way to interpret this requirement:

<b>If the PSE...GPE or LSE...</b>	<b>Specified an <u>alternate Approval URL</u>Entity</b>	<b>The <u>PSE should be grantedalternate entity has</u> rights to approve or deny</b>
	<b>Did not <u>specifySpecified</u> an Approval URL</b>	<b>The BA should have <u>proxy approval rights for the PSEThe PSE has</u> rights to approve or deny</b>
	<b>Did not specify an <u>Approval URL</u></b>	<b>The Host BA should have <u>proxy approval rights for the PSE</u></b>

## 004-C Appendix C – Data Submission and Modifications

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### A. Required and Correctable e-Tag Data

#### A. for New Interchange Transactions

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A new Interchange transaction is an Arranged Interchange (e-Tag) that has not yet been approved or confirmed for implementation. Such Arranged Interchange must be presented to those Approval Entities (as e-Tag) that are responsible for the implementation of the Interchange transaction in order that they may evaluate the e-Tag and determine whether or not the Interchange can be implemented.

The following information describes what is to be used to describe required and what is correctable in such ~~an~~ Request For -Interchange transaction.

(RFI). “Correctable” as used below indicates a field that may be modified by the RFI author prior to a RFI reaching a composite state of CONFIRMED. The lack of this term below indicates that the field is not correctable. “Required” as used below indicates a field must be populated with data in order for the RFI to be considered valid. The lack of this term indicates that the field is not required.

## 1. Market Information

### 1.1. RESERVED

1.2. Financial Path (Required) – the description of financially responsible parties for the Interchange in order. This will typically start with a Purchasing-Selling Entity providing generation (GPE) and finish with a Load Serving Entity (LSE), and where applicable, intermediate Purchasing-Selling Entities between the two.

1.2.1. Energy Title Holder(s) (Required) – the identity of the entities financially responsible to take and/or deliver the energy as described in the physical path. This will typically be a Purchasing-Selling Entity providing generation (GPE), a Load Serving Entity (LSE), and where applicable, Intermediate Purchasing-Selling Entities.

1.2.1.1. Energy Product Type (Required) (Correctable) – the type of energy delivered by the Energy Title Holder.

~~1.2.1.3.~~ 1.2.1.2. Contract Number(s) (Correctable) – reference to a Transaction entered into by the Energy Title Holder with one or more other participants in the Transaction.

~~1.2.1.4.~~ 1.2.1.3. Miscellaneous Information (Correctable) – information provided at the Requesting PSE’s option regarding the Transaction.

## 2. Physical Information

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- 2.1. Physical Path (Required) – the description of physically scheduling parties for the Interchange in order and related to the financially responsible parties described above. This will always contain a Generation segment, at least one Transmission segment, and a Load segment.
  - 2.1.1. Generation (Required) – set of data describing the physical and contractual characteristics of the energy source.
    - 2.1.1.1. Source (Required) – the physical point at which the energy is being generated. This may vary in granularity, dependent on local business practices.
    - 2.1.1.2. Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Purchasing-Selling Entity providing generation (GPE) and the Generator Operator.
    - 2.1.1.3. Miscellaneous Information (Correctable) – information provided at the Requesting PSE's option regarding the Interchange Transaction.
    - 2.1.1.4. Energy Profile (Required) – energy to be produced by the Generator Operator for this Transaction.
  - 2.1.2. Transmission (Required) – set of data describing the physical and contractual characteristics of a wheel (import, export, through, etc.).
    - 2.1.2.1. Transmission Service Provider (Required) – the identity of the transmission provider that is wheeling the energy.
    - 2.1.2.2. Point of Receipt (Required) (Correctable) – valid Point of Receipt for scheduled Transmission Reservation.
    - 2.1.2.3. Point of Delivery (Required) (Correctable) – valid Point of Delivery for scheduled Transmission Reservation.
    - 2.1.2.4. Scheduling Entities (~~Correctable~~[Required in Western Interconnection](#)) – entity that is physically scheduling interchange on behalf of the Transmission Service Provider in order to provide wheeling services. Typically this is the Balancing Authority for the Transmission Service Provider, but may be several Balancing Authorities supporting a regional transmission service. If the Scheduling Entity code for the physical segment is not identical to the Transmission Service Provider (TSP) code on that physical segment, the Scheduling Entity code must be explicitly specified or required. ~~This field is required for the Western Interconnect.~~
    - 2.1.2.5. Loss Provision Information (Required) (Correctable) – information describing the manner in which losses are accounted when they are not scheduled as in-kind megawatt distributions through the original transaction. Types may be financial (paid in dollars based on tariff provisions), internal (scheduled in megawatts to the Transmission Service Provider from a resource inside the Transmission Service Provider's area), or external (scheduled in megawatts to the Transmission Service Provider from a resource outside the Transmission Provider's area). If internal or external, must specify contract numbers or Transaction IDs.

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- 2.1.2.6.** Miscellaneous Information (Correctable) – information provided at the Requesting PSE's option regarding the transaction.
- 2.1.2.7.** POR and POD Profiles (Required) – schedule of Energy Flow imported at the Point of Receipt and exported at the Point of Delivery.
- 2.1.2.8.** Transmission Reservation Number(s) (Required) (Correctable) – reference to a particular transmission reservation being used to provide transmission capacity to support the transaction being described.
- 2.1.2.9.** Transmission Product (Required) (Correctable) – sSpecifies the firmness of service associated with the transmission reservation being used.
- 2.1.2.10.** Requesting PSE (Required) (Correctable) – identifies the entity that purchased and holds the transmission reservation being presented for use.
- 2.1.2.11.** Transmission Allocation Profile (Required) – profile of transmission reservation allocated by the Requesting Purchasing-Selling Entity for use for this Transaction.
- 2.1.3.** Load (Required) – set of data describing the physical and contractual characteristics of the energy sink.
  - 2.1.3.1.** Sink (Required) – the physical point at which the energy is being consumed. This may vary in granularity, dependent on local business practices.
  - 2.1.3.2.** Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Load Serving Entity and the distribution provider.
  - 2.1.3.3.** Miscellaneous Information (Correctable) – information provided at the requesting PSE's option regarding the Transaction.
  - 2.1.3.4.** Energy Profile (Required) – energy to be consumed by the load for this Transaction.

**[Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction](#)**

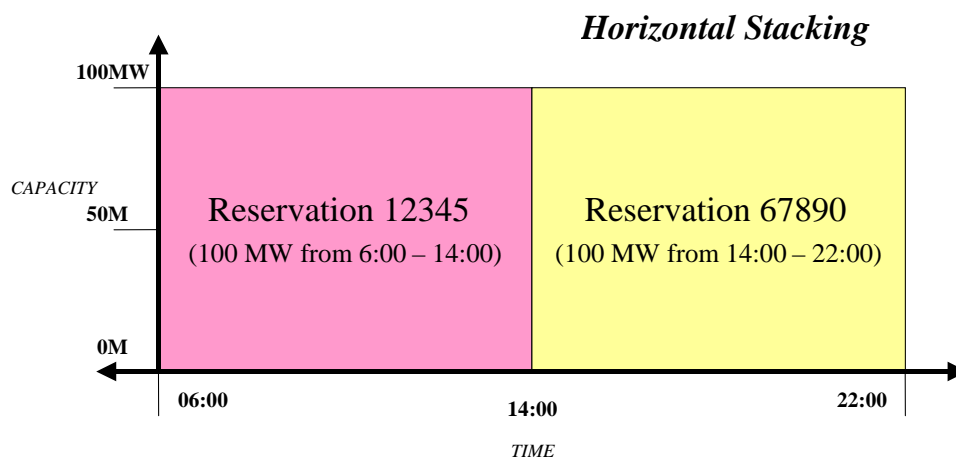
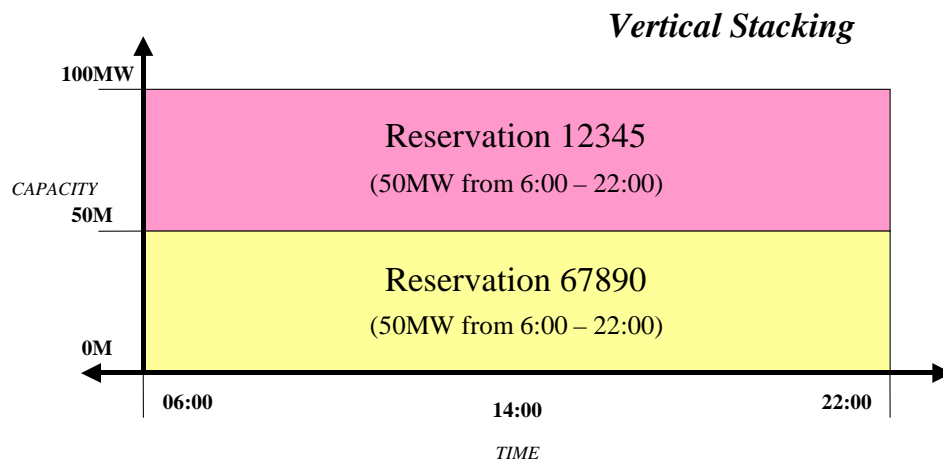
[The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:](#)

- [Vertical stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain net level of transmission capacity, and](#)
- [Horizontal stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain transmission capacity coverage over time.](#)

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their INTERCHANGE TRANSACTION, they must understand the following requirements:

- Stacks MUST be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the TRANSACTION'S energy flow.

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## **B. Curtailments and Reloads (Reliability Related Profile Modifications)**

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Curtailments and Reloads are special kinds of modifications to an Interchange transaction's energy profile based on reliability concerns. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the transaction request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The TRANSACTION being curtailed or reloaded,
- All necessary profile changes to set the maximum flow allowed for the transaction during the appropriate hours,
- A contact person that initiated the curtailment or reload, and
- A description of the necessity for the schedule change.

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## **C. Market-Related Profile Modifications**

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Profile Modifications are changes to an Interchange TRANSACTION'S energy profile based on market desires. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the Interchange TRANSACTION request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The Interchange TRANSACTION being modified,
- All necessary profile changes to set the transmission capacity or energy flow to the desired levels during the appropriate hours, and
- A contact person that initiated the modification.

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## **D. Transmission Stacking**

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### **Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction**

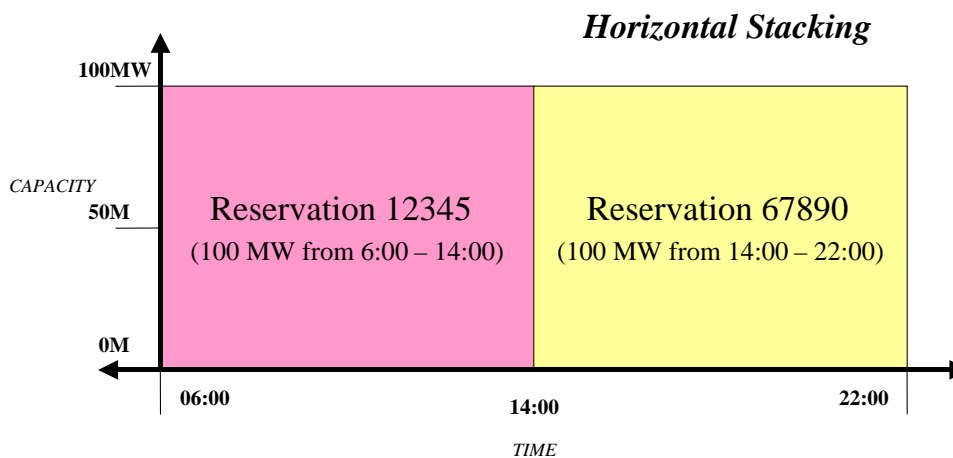
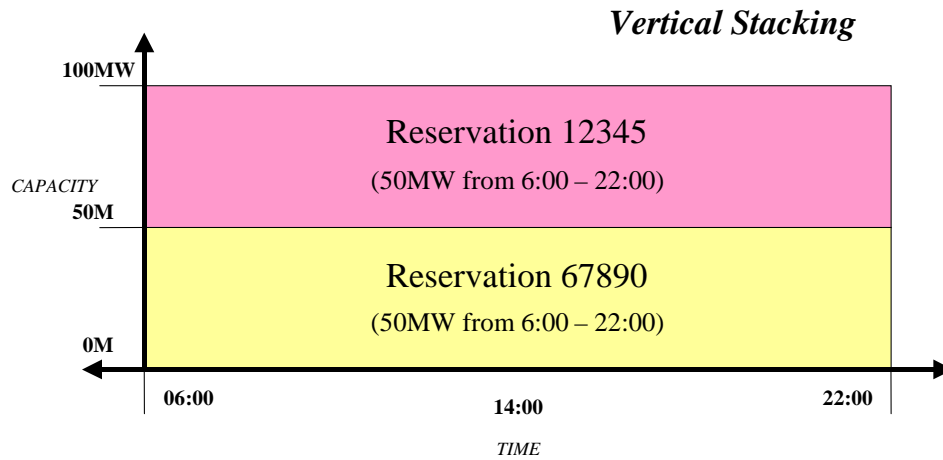
The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:

- Vertical stacking, in which a Requesting PSE combines multiple reservations to achieve a certain net level of transmission capacity, and
- Horizontal stacking, in which a Requesting PSE combines multiple reservations to achieve a certain transmission capacity coverage over time.

**Comments Submitted by E. Davis, Entergy**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their Interchange Transaction, they must understand the following requirements:

- Stacks MUST be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the Transaction's energy flow.

## 004-D Appendix D – Commercial Timing Tables

### Timing Requirements for all Interconnections except WECC

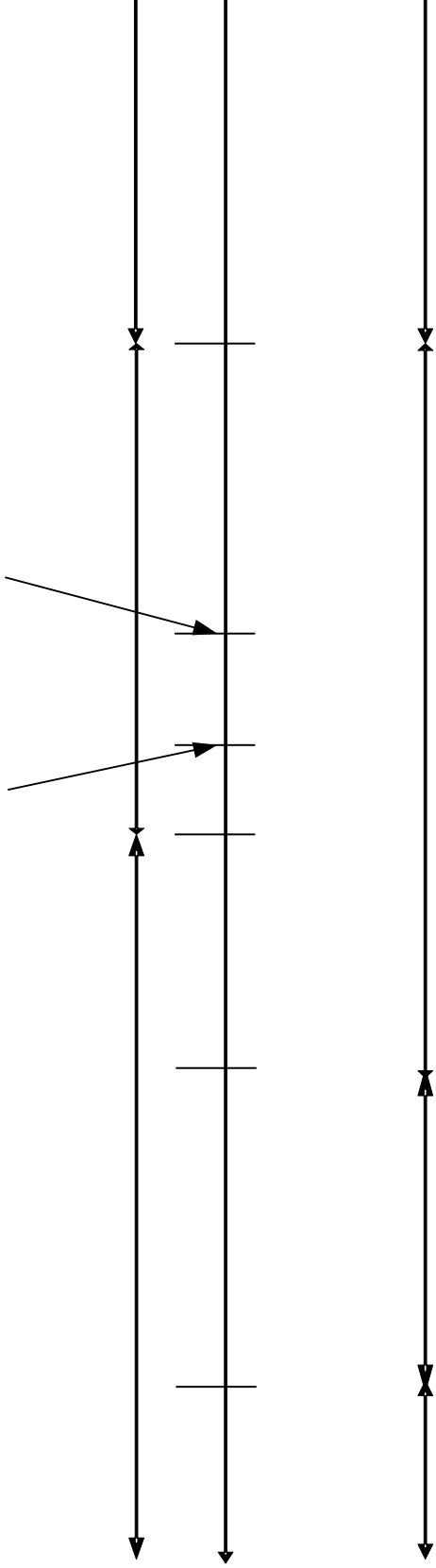
	A	B	C	D
If Actual Arranged Interchange (RFI) <sup>1</sup> is Submitted	IA Assigned Time Classification	GPE, LSE, and PSE <sup>2</sup> Conduct Market Assessments <sup>3</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
> 1 hour after the RFI start time	<u>After-the-Fact</u>	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
< 15 minutes prior to ramp start and ≤ 1 hour after the RFI start time	<u>Late</u>	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
< 1 hour and ≥ 15 minutes prior to ramp start	<u>On-time</u>	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥ 1 hour and < 4 hours prior to ramp start	<u>On-time</u>	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	<u>On-time</u>	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

1 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

2 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

3 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for all Interconnections except WECC



RFI submit time  
relative to start  
time

On Time

5:55  
4 hours  
before  
ramp start

8:55  
1 hour  
before  
ramp start

Timing Requirements for WECC

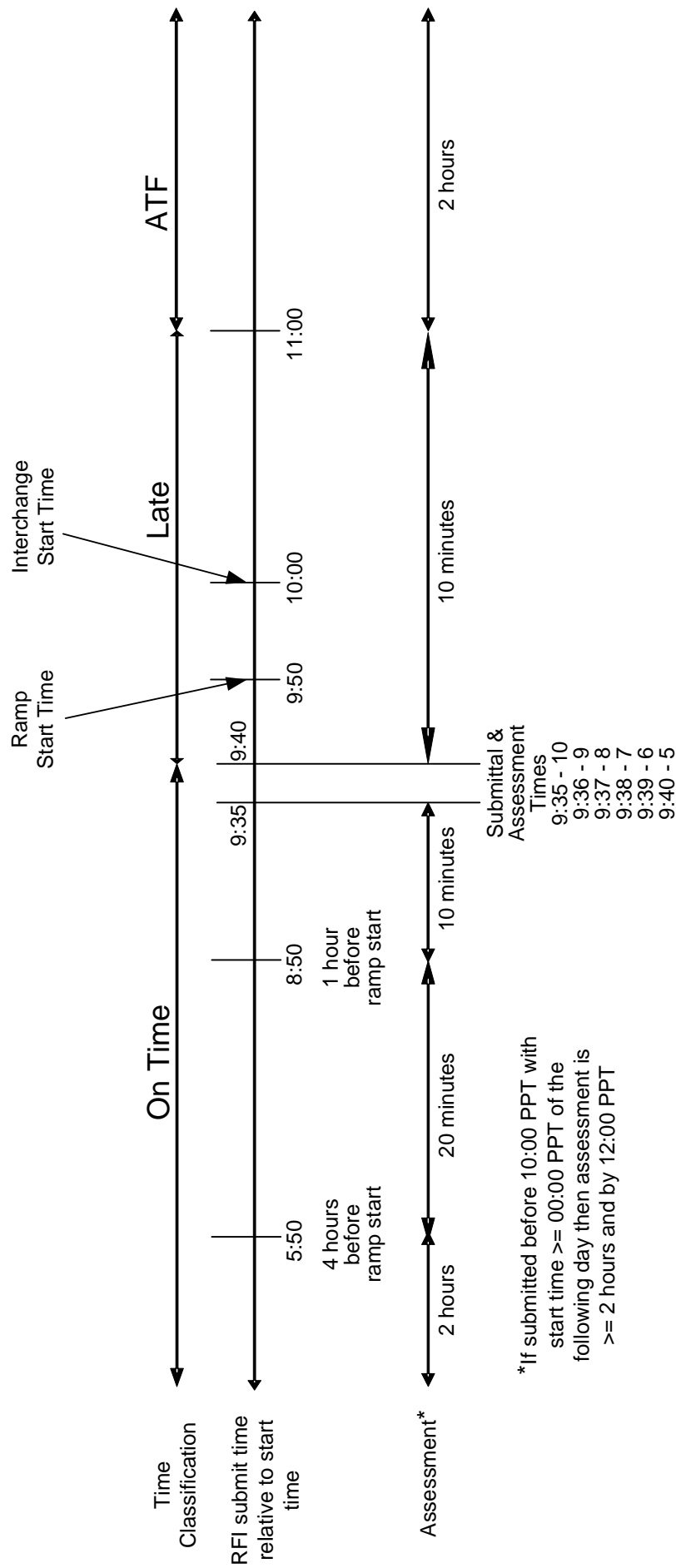
	A	B	C	D
	IA Assigns Time Classification	GPE, LSE, and PSE <sup>5</sup> Conduct Market Assessments <sup>6</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
If Actual Arranged Interchange (RFI) <sup>4</sup> is Submitted	IA Makes Initial Distribution of Arranged Interchange			
>1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
<10 minutes prior to ramp start and <1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
10 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 5 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
11 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 6 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
12 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 7 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
13 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 8 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
14 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 9 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
<1 hour and ≥ 15 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥1 hour and < 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start
Submitted before 10:00 PPT with start time ≥ 00:00 PPT of following day	≤ 1 minute from RFI submission	By 12:00 PPT of day the Arranged Interchange was received by the IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

4 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

5 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

6 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for WECC





**Comments on Standards Recommendation**  
**WEQ 2009 AP Item (1.a) R05020; WEQ 2009 AP Item (3.a.vii)**  
**October 8, 2009**

The following are comments submitted by Open Access Technology International, Inc. (OATI) on the above Standards Recommendation open for public comment.

General Comment on the Recommendation:

Redlined changes are not apparent in the posted version of this recommendation. Prior to submittal for action by the WEQ Executive Committee the JESS or NAESB Staff should clearly indicate in 'hard' redline and underscored or strike-out text the suggested changes being recommended. In both the Recommendation proper and the attachment to the Recommendation for modifications to WEQ-004, all references to the "Electronic Tagging Functional Specification" should be made consistent and be either "Version 1.8.1 Electronic Tagging Functional Specification" or "Electronic Tagging Functional Specification Version 1.8.1" (see comment on WEQ-004-2).

Specific Comments on the Attachment to the Recommendation, Standard WEQ-004:

**004-1:** It is unclear of the exact intent in removing the reference to where the required RFI should be submitted. If the intent is to remove the Interchange Authority (IA) from the standard, there are numerous references to the IA first in the Applicability paragraph and later in the body of the standard (see 4.6.1, 4.8, 4.9, 4.10, and 4.18) that remain in the Recommendation as drafted. If this is to be a global change to remove the Interchange Authority reference, then there needs to be more modifications than just what is shown in the Recommendation.

**004-2:** Wording of this Standard has a problem - "...shall be an the e-tag...". The cite for version of the Tagging specification should either be "Version 1.8.1 Electronic Tagging Functional Specification" or "Electronic Tagging Functional Specification Version 1.8.1" and be made consistent with all other such references.

Once the Tagging Specification is cited as the means for communicating the RFI, all references to the Interchange Authority could be changed to cite the (e-Tag) Authority Service, assuming removal of the IA from the Standard is the intent. However, this does not alleviate the problem that while modifications and Approval Entity actions, etc. are submitted to the Interchange Authority (or Authority Service) (4.6.1, 4.8, 4.9, etc.), the recommended standard as drafted is silent as to where the RFI is submitted in the first place.

Since Standard 004-2 is where the e-Tag becomes synonymous with RFI, it is recommended that the initial submission requirement be included/identified early in the standard in 004-2 or sub-standard:

004-2 Until other means are adopted by NAESB, the primary method of submitting the Request For Interchange (RFI) shall be an e-Tag communicated to and managed by the Authority Service designated by the Sink Balancing Authority using protocols compliant with the Version 1.8.1 Electronic Tagging Functional Specification.

Including the submission responsibility or obligation on the Sink Balancing Authority may be considered duplicative of work being done in the NERC Coordinate Interchange Standard drafting, but there are other instances where the same information is repeated in both the NAESB Standards and NERC Standards, e.g., the Tag Timing table. Removing the identification of where the initial RFI must be submitted in 004-1 introduces unnecessary ambiguity into the WEQ-004 Standards for no apparent benefit and should be rectified in the final Recommendation presented to the WEQ EC.

Comments Submitted by C. Wesley, PJM

**PJM respectfully submits the following comments.**

The standard is well written and identifies the different operations for the Eastern and Western interconnections.

My only comment is the deletion of the following sentence in Appendix A under Services:

As the e-Tag Authority Service is the most critical element of the e-Tag system, it must meet much higher standards.

The statement does not provide additional substance to the standard.

**Comments Submitted by the WEQ JESS**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

**WEQ-000 Acronyms and Definitions**

<u>TERM</u>	<u>DEFINITION</u>
<u>Straddle Ramp</u>	<u>Ramp that divides the start ramp duration equally across the profile block start or end time.</u>

**WEQ-004 Coordinate Interchange**

**Introduction**

Incorporate necessary revisions to the approved NAESB Coordinate Interchange Business Practice (R03013) to include added definitions, Industry transformation from Reliability Authority (RA) to the Reliability Coordinator (RC), and improvements to certain requirements of the Standard to ensure it is “lock-step” with the NERC Coordinate Interchange Standard. Coordinate Interchange standards establish the Interchange Transaction requirements for coordination of the commercial arrangements and to complement the NERC reliability standards.

**Applicability**

The Coordinate Interchange business practice standards ~~apply~~re applicable to Balancing Authority (BA), Reliability Coordinator (RC), Interchange Authority (IA), Transmission Service Provider (TSP), Purchasing-Selling Entity (PSE), Generator-Provider Entity (GPE), Load-Serving Entity (LSE), and any Transmission Purchasing-Selling Entity ~~whose transmission approval rights are cited~~ (TPSE).

**Definition of Terms - Reserved**

~~004-0.1 Approval Entity – An entity that has approval rights for an Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE), and the Load-Serving Entity (LSE) that are included in the Arranged Interchange, as well as any Purchasing-Selling Entity (PSE) whose transmission rights are cited (TPSE) in the Arranged Interchange.~~

~~004-0.2 Arranged Interchange – The state where the Interchange Authority has received the Interchange information (initial or revised).~~

~~004-0.3 Balancing Authority (BA) – The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.~~

~~004-0.4 Balancing Authority Area (BAA) – The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.~~

**Comments Submitted by the WEQ JESS**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- ~~004-0.5 — **Confirmed Interchange** — The state where the Interchange Authority has verified the Arranged Interchange.~~
- ~~004-0.6 — **Curtailment** — A reduction in the scheduled capacity or energy delivery of an Interchange transaction.~~
- ~~004-0.7 — **Generator-Providing Entity (GPE)** — The Purchasing-Selling Entity who is responsible for providing the source generation from owned, affiliated, or contractually bound generation.~~
- ~~004-0.8 — **Implemented Interchange** — The state where the Balancing Authority enters the Confirmed Interchange into its Area Control Error equation.~~
- ~~004-0.9 — **Interchange** — Energy transfers that cross Balancing Authority boundaries.~~
- ~~004-0.10 — **Interchange Authority (IA)** — The responsible entity that authorizes implementation of valid and balanced Interchange schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.~~
- ~~004-0.11 — **Interchange Block Accounting** — Energy accounting that assumes a beginning and ending ramp time of zero minutes. For accounting purposes, this moves the energy associated with the starting and ending ramps into the adjacent starting and ending clock time of the Interchange.~~
- ~~004-0.12 — **Interconnected Operations Service** — A service (exclusive of basic energy and transmission services) that is required to support the reliable operation of the interconnected bulk electric systems.~~
- ~~004-0.13 — **Load-Serving Entity (LSE)** — The responsible entity that secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.~~
- ~~004-0.14 — **Market Assembly** — The function responsible for coordinating the submittal of a completed and accurate Arranged Interchange from the Requesting Purchasing-Selling Entity to the Interchange Authority within an organized Market.~~
- ~~004-0.15 — **Market Period** — The period of time beginning with the Requesting Purchasing-Selling Entity (PSE), or its designee, making required purchase, sale, and transmission service arrangements to support the Arranged Interchange through the period of time when the Interchange Authority receives the Arranged Interchange.~~
- ~~004-0.16 — **Purchasing-Selling Entity (PSE)** — The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.~~

### Comments Submitted by the WEQ JESS

NAESB WEQ Coordinate Interchange Standards – WEQ-004

- ~~004-0.17~~ ~~**Reliability Coordinator (RC)**~~ – The entity with the highest level of authority that has responsibility for the reliable operation of the bulk electric system, has the wide area view of the bulk electric system, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of interconnection reliability operating limits, which may be based on the operating parameters of transmission systems beyond any transmission operator’s vision.
- ~~004-0.18~~ ~~**Reliability Period**~~ – The period of time beginning with the Interchange Authority (IA) requesting approvals from the reliability Approval Entities through the completion of the physical flow of the energy associated with the originally submitted Arranged Interchange.
- ~~004-0.19~~ ~~**Request For Interchange (RFI)**~~ – A collection of required data, as defined in Appendix C of this standard, necessary for the purpose of submitting to the Interchange Authority as an Arranged Interchange.
- ~~004-0.20~~ ~~**Requesting Purchasing-Selling Entity (PSE)**~~ – The entity that prepares and submits the Request For Interchange (RFI) to the Interchange Authority (IA) and holds the transmission reservation being presented for use.
- ~~004-0.21~~ ~~**Sink Balancing Authority**~~ – The Balancing Authority in which the load (sink) is located for an Interchange Transaction.
- ~~004-0.22~~ ~~**Source Balancing Authority**~~ – The Balancing Authority in which the generation (source) is located for an Interchange Transaction.

### **Business Practice Requirements**

- 004-1** All requests to implement bilateral Interchange (excluding Interchange for emergency energy) between a Source Balancing Authority and a Sink Balancing Authorities’ registered e-Tag Authority sServicey, where alone or both Balancing Authority isAuthorities are located in either the Eastern or Western Interconnection, shall be accomplished by the submission of a completed and accurate Request For Interchange (RFI) to the Interchange Authority (IA) to the Sink Balancing Authority’s registered e-Tag Authority Service.
- 004-1.1** To the extent that Intra BA transactions are submitted as a Request for Interchange (RFI), those transactions will be subject to all provisions of this standard.
- 004-1.2** RESERVED
- 004-1.3** RESERVED
- 004-1.4** RESERVED

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**004-1.5** RESERVED

**004-1.6** RESERVED

**004-2** Until other means are adopted by NAESB, the primary method of submitting the Request For Interchange (RFI) ~~to the Interchange Authority~~ shall be an the e-Tag communicated to and managed by the Sink Balancing Authorities's registered e-Tag Authority sService using protocols compliant with the Version 1.8.1 Electronic Tagging Functional Specifications.  
~~using protocols compliant and in accordance with the Version 1.8.1 Electronic Tagging Functional Specification, Version 1.8.~~

**004-2.1** A backup or redundant electronic system shall be available for immediate use should the primary electronic means become disabled. as documented in Appendix A "Electronic Tagging Service Performance Requirements and Failure Procedures".

**004-2.2** RESERVED

**004-3** Arranged Interchange that crosses Interconnection Boundaries (Eastern, Western, HQ (TransEnergie) or ERCOT) shall be subject to the submittal and approval timing requirements associated with the most restrictive interconnection involved in the Interchange.

**004-3.1** For Interchange where the sink is in the Western Interconnection for same day transactions, the last Purchasing-Selling Entity before the DC Tie in the Eastern Interconnection shall be responsible for submitting the e-Tag.

**004-4** ~~In the event of e-Tag system component failure, the requirements and procedures contained within Appendix A "Electronic Tagging Service Performance Requirements and Failure Procedures" shall be followed.~~RESERVED

**004-4.1** RESERVED

**004-4.2** RESERVED

**004-5** It shall be the responsibility of the ~~load serving Purchasing-Selling Entity (PSE) LSE~~, or its designee, to ensure the completed and accurate ~~Request For Interchange (RFI)~~ contains, at a minimum, the information specified in Appendix C "RequiredData Submission and Correctable-Tag DataModifications".

**004-6** Approval Entities shall only be allowed to take actions against an Arranged Interchange as specified in Appendix B "Interchange-Transaction e-Tag Actions".

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**004-6.1** Prior to the expiration of the market assessment period defined in the Appendix D, "Commercial Timing Tables", Column B, the TPSE, LSE, and GPE may respond to a request from the Interchange Authority to transition an Arranged Interchange to a Confirmed Interchange. ~~Note: The TPSE, LSE, and GPE have optional approval rights. If the TPSE, LSE, or GPE does not respond, these rights will be treated as if approved. In addition, if the TPSE, LSE, or GPE is also the PSE creating the tag, these rights will be treated as approved.~~

**004-6.1.1** Each TPSE, LSE, and GPE shall assess the Arranged Interchange for completeness and accuracy of the information contained in the Arranged Interchange.

**004-6.1.2** If the TPSE, LSE, and/or GPE dedoes not respond to a request from an RFI, the Interchange Authority, the Arranged Interchange is considered passively approved by that entity.

004-6.1.3 If the TPSE, LSE, or GPE is also the PSE creating the e-Tag, Arranged Interchange will be considered approved by that entity.

**004-6.2** RESERVED

**004-7** ~~All information on energy purchase, energy sale, and transmission service arrangements required for the RFI shall be performed prior to being submitted to the IA. RESERVED~~

~~At its discretion, the Requesting Purchasing-Selling Entity may defer this responsibility to the Market Assembly function.~~

**004-7.1** RESERVED

**004-8** **EASTERN AND WESTERN INTERCONNECTION TIMING REQUIREMENTS:**

**004-8.1** ~~The completed and accurate Request for Interchange (RFI), or modification to a modified Arranged Interchange submitted to the Interchange Authority shall be subject to the timing requirements contained in this standard under Appendix D "Commercial Timing Table."~~

**004-8.1** RESERVED

**004-8.2** ~~Transactions that cross Interconnection boundaries involving ERCOT shall follow the timing requirements contained within this Standard. RESERVED~~

**004-8.3** RESERVED

**004-9** All denials of Arranged Interchange by an Approval Entity during the assessment period (reliability and market) shall be accompanied by the reason for such denial and communicated to the Interchange Authority and by the Interchange Authority to the Requesting Purchasing-Selling Entity PSE.

**004-10** Any changes to the status of the Arranged, Confirmed, or Implemented Interchange shall be communicated by the Interchange Authority to all involved

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parties ~~of listed on the Interchange, such as Balancing Authorities, Reliability Coordinators, Generator-Providing Entity, Load-Serving Entity, and Transmission Service Providerse-Tag.~~

**004-11** The Requesting PSE shall have the right to request modifications to the Arranged, Confirmed or Implemented Interchange for non-reliability related issues according to the timing requirements in Appendix D ~~set forth in this Standard. For Implemented Interchange, only “future” hours may be modified.~~ “Commercial Timing Table”.

**004-11.1** The Requesting PSE can request to increase or decrease the energy level or the committed transmission(s) profile of an Arranged, Confirmed or Implemented Interchange. ~~For Implemented Interchange, only “future” hours may be modified.~~  
a) ~~In the case of an increase in the energy level, the Requesting PSE must provide and modify the necessary transmission capacity to cover the increased energy flow.~~

**004-11.2** The Requesting PSE shall have the right to request an extension to the Arranged, Confirmed or Implemented Interchange energy profile prior to completion to reflect a desire to flow energy during hours not previously specified.

**004-11.2.1** ~~The Requesting PSE must provide the necessary transmission capacity with the extension.~~

RESERVED

**004-11.3** If the modification is denied by any Approval Entity, the previous ~~confirmed~~Confirmed or Implemented Interchange remains valid, including the duration period.

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**004-11.4** The Requesting PSE shall submit a transmission capacity profile that is greater than or equal to the energy profile.

**004-12** All parties involved in the Arranged Interchange shall have, or arrange to have, ~~personnel and facilities on site and immediately~~resources available ~~for~~process notification of changes to the Arranged Interchange from the beginning of the Market Period through the time when the energy flow of the Implemented Interchange has been completed.

**004-13** Unless provided for under a FERC-approved market mechanism, energy accounting for all Interchange Transactions shall be accomplished via Interchange Block Accounting.

**004-14** Settlement of losses shall be ~~either handled~~designated as financial or as payment in-kind in accordance with the Transmission Service Provider tariff and posted business practices.

**004-14.1** For losses ~~handled~~designated as payment in-kind, ~~the~~returned concurrently the requesting PSE, ~~or its designee,~~ shall ~~communicate to~~designate in the ~~IA, via Arranged Interchange~~RFI the amount of MW losses and the entity that should receive them along the Interchange path.

**004-15** All Reliability Coordinators, Balancing Authorities, Transmission Service Providers, Generator-Providing Entity, Load-Serving Entity, and other entities involved in an Interchange request shall not disclose the Interchange Transaction information to any ~~PSE~~entity not involved in the Interchange ~~transaction~~Transaction.

**004-16** ~~After a curtailment of Interchange has ended, the Sink Balancing Authority shall return the Interchange profile to the previous level, unless otherwise specified by the entity submitting the Request For Interchange.~~

RESERVED

**004-17** ~~Default~~All ramps shall be Straddle Ramps. Instantaneous ramps are indicated by a zero minute ramp duration. Ramp durations are specified in minutes. The ramp start is calculated by dividing the ramp duration by two and subtracting this quantity from the profile block start time. The ramp end time is calculated by dividing the ramp duration by two and adding this quantity to the profile block start time. The final profile block implies a ramp down to zero starting at one-half the end ramp duration subtracted from block end time and continuing to one-half the end ramp duration added to the block end time. The ramp start and stop times represent minutes over which generation will increase or decrease from the previous block level to the current block level.

Ramp durations of any value may be specified in a RFI and must be agreed to by all parties with approval rights involved in the RFI.

If no ramp duration is included on the e-Tag for the North American Interconnection~~Interconnections~~ the default ramp duration shall be as follows:

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**004-17.1** ~~Default ramp duration for the Eastern Interconnection shall be 10 minutes equally across the start and end times of the Implemented Interchange (i.e., 5 minutes before start and 5 minutes after the end time of the implemented Interchange) unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

**004-17.2** ~~**004-17.2**—Default ramp duration for the Western Interconnection shall be 20 minutes equally across the top of the hour (i.e., 10~~

~~**004-17.3** The default ramp that crosses the Eastern and Western Interconnections shall be 20 minutes before start and 10 minutes after the end time of the Implemented Interchange) of the Implemented Interchange unless otherwise agreed to by all parties involved in the Implemented Interchange.~~

### Coordinate Interchange for Capacity Benefit Margin

004-18\_ All scheduled use of a Transmission [Service](#) Provider's transmission capacity set-aside for Capacity Benefit Margin (CBM) in support of energy imports into a load Balancing Authority [Area](#) served by the Transmission [Service](#) Provider shall be uniquely represented in all ~~-RFI~~ submitted to the IA.

004-18.1 ~~The~~ Until other means for submitting the RFI are adopted by NAESB, the following data fields shall be specified in each e-Tag requesting the use of the Transmission [Service](#) Provider's CBM:

- The e-Tag transaction type shall be EMERGENCY\_.
- The Transmission PSE (TPSE) listed in the physical segment where CBM is being requested shall be the registered Entity Code of the Load Serving Entity requesting use of CBM. Note that this is not necessarily the PSE submitting the e-Tag.
- The Transmission Product associated with the Transmission [Service](#) Provider whose use of CBM is being requested shall be 7-CB\_.

004-18.2 The Transmission [Service](#) Provider may require the specification of a unique Transmission Reservation Number in association with any request for use of CBM. Such requirement shall be fully documented in the Transmission [Service](#) Provider's Business Practices posted on OASIS. The [Transmission Service Provider](#) reserves the right to deny any RFI requesting use of CBM if the required Transmission Reservation Number is not specified.

004-19 MW values specified in Interchange Transactions must be integrated into MWh values across various time intervals. Interchange Transactions that start or stop within an hour may result in fractional MWh values being calculated for the period. Additionally, these values may be used to calculate totals for longer periods (such as a portion of a day, whole day, week, month, etc). These total numbers may vary depending on the method used to perform the calculation. In order to ensure consistent treatment across the industry where whole MWh values are used, the following calculation guidelines shall be followed:

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004-19.1 For time periods of an hour or less, MWh values shall be rounded to the nearest whole MWh (< .50 down, >= .50 up) for each time interval.

004-19.2 For time periods of an hour or more (e.g. a day, a week, the off-peak hours for a day, etc.), calculate and round the MWh values for each individual hour within the time period, then sum the hourly results to get the MWh value for the whole time period.

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## 004-A Appendix A – Electronic Tagging Service Performance Requirements and Failure Procedures

This ~~document~~[appendix](#) describes the performance requirements of the e-Tag ~~System~~[system](#) and the procedures to be followed in the event of an e-Tag ~~System~~[system](#) component's failure. Due to the importance of accurate information flow, these procedures and requirements have been developed to ensure that reliable data communications remain available at all times.

### A. Performance Requirements

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#### **e-Tag Agent Service Requirements**

Entities that are required to use e-Tag ~~agent services~~[Agent Services](#) are responsible for obtaining an e-Tag ~~agent service~~[Agent Service](#) in order to conduct business; there are no exemptions to this requirement. There is no specific requirement against which performance should be measured. However, in cases of e-Tag ~~agent service~~[Agent Service](#) failure, non-receipt of critical information (such as curtailment notifications, transaction denials, and schedule modifications) due to performance problems shall be the responsibility of the e-Tag ~~agent~~[Agent Service](#) user.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the e-Tag ~~agent~~[Agent Service](#) user is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

#### **e-Tag Approval Services**

Entities that are required to employ e-Tag ~~approval services~~[Approval Services](#) are responsible for providing an e-Tag ~~approval service~~[Approval Service](#) as well as providing a level of redundancy; there are no exemptions from this requirement. At a minimum, e-Tag ~~approval services~~[Approval Services](#) may not have greater than 1.0% of the e-Tags sent to their system within a calendar month be determined by the ~~Interchange e-Tag~~[Authority Service](#) as having a state of "COMM\_FAIL." While there is no specific level of redundancy that is required by this ~~Appendix~~[appendix](#), sufficient redundancy must be in place that the entity is confident of achieving this standard.

While it is acceptable for an entity to contract with a third-party to provide for this requirement, it should be understood that the entity required to employ the e-Tag ~~approval service~~[Approval Service](#) is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

In order to monitor compliance with this requirement, the Balancing Authorities will arrange with their ~~e-Tag~~[Authority Services](#) to generate compliance reports at the beginning of each month determining this metric for the previous month ~~on a Provider-by-Provider basis~~. These ~~results should be reports shall be~~ available for ~~investigation of any violations, and the results of this investigation may be posted once finalized~~[five years](#).

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### Interchange e-Tag Authority (IA) Services

#### Service

As the Interchange e-Tag Authority service is the most critical element of the e-Tag system, it must meet much higher standards. ~~These standards can be divided into two areas: Implementation, and Policies and Performance.~~

#### Implementation

~~Interchange Authority services must be implemented in a manner that provides for redundancy and fault-tolerance through hardware and software; there are no exemptions to this requirement. Specifically, an Interchange Authority service must provide, at a minimum, the following:~~

- ~~• Two or more connections to the Internet, which may either be available concurrently or be switch able on demand (within five minutes);~~
- ~~• Redundant/Fault-Tolerant Networking Equipment between the Internet providers' demarcation points and the computer systems, as well as between each of the components of the system required to be inter-networked to provide functionality (i.e., FDDI Rings, dual homing, etc...);~~
- ~~• Redundant/Fault-Tolerant computer systems that can immediately recover from a loss of any single component (i.e., mirrored databases, web clusters, etc...).~~

~~— Providers of Interchange Authority services may be required to provide documented explanations of how they meet or exceed the above requirements. These documents may be evaluated for fitness and will be held in confidence.~~

#### Policies and Performance

The following shall be required of all Interchange e-Tag Authority services:

- All scheduled outages must be performed between the hours of 01:00 CST and 04:00 CST. Any maintenance that must be performed outside this three hour window must be accomplished through the use of redundant systems in such a manner that no outage is visible;
- Notice of Scheduled outages must be given to the public at least 24 hours before the outage is to occur. ~~Notice shall be deemed valid if the following actions have been taken:~~
  - ~~2. Users of the system are sent notifications, by the e-Tag Authority Service or designated third party via email or via a proprietary system, time stamped at least 24 hours prior to the outage;~~
  - ~~3. The TISFORUM mailing list is sent Email notification time stamped at least 24 hours prior to the outage;~~
  - ~~4. The OASIS TSIN mailing list is sent email notification time stamped at least 24 hours prior to the outage.~~

~~Any system problem that creates behavior contrary to that described in the e-Tag specification shall constitute an "unscheduled outage." For example, a system that begins rejecting every third message it receives due to a component failure~~

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~~in a cluster would constitute an unscheduled outage (although the system was only failing one third of the time, it was not performing as described in the e-Tag specification).~~

- ~~Interchange Authority services may~~ Services shall not be in a state of scheduled or unscheduled outage for more than 0.5% of the time for the month, based on outage time (in minutes) for the month divided by total time in the month (in minutes). ~~Specific allowed outages may be granted to address special circumstances (i.e., scheduled specification changes, major internet outages, etc...). These specific allowed outages, if granted, may require public posting for all customers to view~~

Any system problem that creates behavior contrary to that described in the Version 1.8.1 Electronic Tagging Functional Specification shall constitute an unscheduled outage. For example, a system that begins rejecting every third message it receives due to a component failure in a cluster would constitute an unscheduled outage.

While it is acceptable for an entity to contract with a third-party to provide for these requirements, it should be understood that the entity required to employ the ~~Interchange~~Ee-Tag Authority ~~service~~Service is ultimately responsible for the provision of the service. The non-performance of a third party does not excuse the entity from the obligation to provide the service.

To monitor compliance with these requirements, ~~the responsible the Operator of an Interchange Authority system may be required~~Balancing Authority will require its e-Tag Authority Service to submit, at the beginning of each month, a report describing outage activity for the previous month. This report shall consist of the following items:

1. The beginning of the outage;
2. The ending of the outage;
3. The type of outage (Scheduled or Unscheduled);
4. The nature of the outage (Maintenance, System Crash, etc...);
5. In the event of an Unscheduled Outage, the cause of the outage and the steps taken to ensure the problem has been addressed and will not reoccur.

~~The report format may be in a standardized electronic form. These documents may be evaluated and held in confidence. Statistics may be developed from these reports identifying system outage durations for each month. These preliminary findings will be held in confidence until they are confirmed. These performance percentages shall be posted and electronically accessible once confirmed, at the end of the month following the month evaluated. available for five years.~~

~~Entities experiencing difficulty due to an unnoticed scheduled or unscheduled outage may send a Request for Investigation. This request should specify the estimated time the outage occurred, the estimated time the outage ended, and document evidence of the outage (such as TMP logs, email messages, etc...). Claims may be investigated with the appropriate Tag Authority Service Operator. Should a Tag Authority Service Operator be unable to refute the claim, and the Investigation Requestor appears to have provided an accurate representation of~~

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~~an undocumented outage, calculated outage percentages may be modified to include the undocumented incident.~~

### **B. Failure Procedures**

Backup procedures are needed because, in a communication system that operates on the public Internet, failures are certain to occur. The failures may be caused as a result of overload of the network, loss of connection to an Internet ~~service~~ ~~Service provider~~ ~~Provider~~, corruption of one or more servers by computer hackers, failure of one or more entity's Internet servers, internal firewall failure, and many other reasons.

Failures ~~also may~~ have a wide variety of scopes. A failure may affect only a single entity with a small number of schedules ~~while all of its neighbors continue to operate normally~~, a small number of utilities in a local area, or may be regional wide involving multiple ~~RTOs~~ with thousands of active schedules. However e-Tag system failures occur, the operation of the Bulk Eelectric System ~~utility grid~~ must continue. This document describes the manner in which operations are to be coordinated should such a failure become a reality.

#### **Assumptions**

A general assumption is that each operational entity in the electric utility industry has an internal energy management system, marketing system, or contract system that will not be affected by the Internet communication failure.

#### **Participating Entities**

**Requesting PSE** - The entity that prepares and submits an RFI, normally a Purchasing Selling Entity.

**Path Participant** – Any of the entities that are part of an Interchange transaction.

**Interchange** ~~e-Tag~~ **Authority Service Entity** – The entity that provides the Interchange Authority service for an ~~e-Tag~~ ~~Tag~~. The ~~Interchange~~ ~~e-Tag~~ ~~Ee-Tag~~ Authority ~~service~~ ~~Service~~ itself is typically a computer system that maintains the master database for the tag and communicates status with other computer systems. The ~~Interchange~~ ~~e-Tag~~ ~~Tag~~ Authority Service Entity is the Sink Balancing Authority ~~utility industry entity that is~~ responsible for providing the Authority Sservice ~~and has registered an Authority Service URL~~ ~~in the Electric Industry Registry~~ ~~e-Tag~~ ~~1.8~~, ~~and this entity's URL is specified by the Sink Balancing Authority.~~

**Approval Entity** – An entity that has approval rights for Arranged Interchange; this includes the Transmission Service Providers (TSP), scheduling Balancing Authorities (BA), Generator-Providing Entity (GPE) and the Load-Serving Entity (LSE) involved in the Arranged Interchange

**Checkout Partners** – The entities that perform ~~the a~~ checkout process. ~~m~~ Most commonly are two adjacent Balancing Authorities checking net interchange. It ~~might~~ ~~may~~ also be two marketers checking sales and purchases, or a ~~transmission~~ ~~Transmission~~ ~~customer~~ ~~Customer~~ checking schedules with a ~~transmission~~ ~~Transmission~~ ~~Service provider~~ ~~Provider~~.

#### **Failure Actions**

When a failure occurs an entity will soon realize that it has lost communications with the other servers in the electronic tagging arena. Yet it must still

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communicate current energy flows across the transmission network and expected flows for the next few hours. Transmission curtailments must be accounted for in the sense that a required reduction in energy flows or increase in generation needs to be communicated. However, accounting issues will take a secondary priority to reliability issues in this exchange, and detail relating back to tags, schedules, and transmission reservations can be reconstructed later.

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### **E-Tag-Tag Authority Service Failure Actions**

When a failure occurs at the level of eE-Tag Authority Service, the effects will trickle down to not only to all of the users of that Authority Service, but also to any participating entity wishing to submit a RFI with a user of the failed eE-Tag Authority Service. While reliability will be the focus during this time, the following procedures shall be used until functionality returns to the eE-Tag Authority Service.

1. Reliability entities will adhere to all currently implemented schedules as communicated to them prior to the eE-Tag Authority Service outage. This will continue until the outage ends or to 4-hours from the beginning of the outage, whichever occurs sooner.
2. As the eE-Tag Authority Service is down, eE-Tags will not be created via that service until operation is reinstated. Subsequently, any tags made via a different eE-Tag Authority Service Entity will not be able to communicate to the downed entity and therefore, no transactions with approval entities that use the downed eE-Tag Authority Service will be approved.
3. The Interchange Authority will broadcast a message by email and/or electronic messaging systems to all entities within its authority service. The message should forecast a recovery time for the eE-Tag service. In the meantime, the eE-Tag Authority Service is down.
4. Reliability Coordinators must contact the Sink Balancing Authority via phone to communicate changes to schedules due to TLR curtailments, reloads or any other reliability change.
5. The Interchange Authority will communicate any reliability changes to other reliability entities within the eE-Tag's physical contract path, including the source Balancing Authority, Transmission Service Providers, and any applicable scheduling entities.
6. Interconnecting-Adjacent Balancing Authorities will continue to verify Net Scheduled Interchange prior to each operating hour.
7. If 4-hours from the original outage time have passed, Requesting PSEs may submit paper copies of the RFI via FAX to the Interchange Authority, excluding the WECC. For the WECC, the only acceptable mechanism for creating a Request For Interchange RFI is creation of a new e-Tag Request.
8. The Interchange Authority will evaluate the paper RFI and will collect the approvals for all valid requests from each Reliability Entity, including the Source Balancing Authority, Transmission Service Providers and any applicable scheduling entities. The IA will communicate the final approval status to all entities. All entities must approve the transaction before being included in any entity's Net Scheduled Interchange.
9. After the outage is complete, each entity will take steps to ensure proper accounting adherence for all applicable approved transactions.

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**Singular Failure Actions**

The table below lists typical failures that might occur and the emergency actions that the entity will take to compensate for that failure.

<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup <del>A</del>actions</b>
Requesting PSE	Unable to submit tag to <del>Interchange</del> <u>E-Tag</u> Authority Service.	Ask another entity in the transaction chain to submit the schedule for you. That entity then becomes the author.  For Interconnections, excluding the WECC, create a backup paper copy of the schedule and fax to authority service entity and all approval entities in the transaction. For the WECC, the only acceptable mechanism for creating <del>an a</del> Request For Interchange is creation of a new e-Tag Request.
Path Participant	Not receiving update messages.	Use Recovery Process to resynchronize from authority service.  Use telephone with Authority Service Entity to update status.
Interchange Authority Service Entity	Unable to send messages to generation or load Balancing Authorities.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity for these control areas.  Telephone Approval Entity to notify of the message failure.  Approve or deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an Approval Entity for an intermediate Transmission <del>Service</del> Provider or Balancing Area.	Telephone schedule author to notify of the message failure. The author will fax the schedule to the Approval Entity.  Telephone Approval Entity to notify of the message failure.  Approve the schedule automatically.  Deny the schedule at the request of the Approval Entity (override).
Interchange Authority Service Entity	Unable to send messages to an information only entity.	No Action required.
<del>Interchange Authority Service Entity</del>	<del>Unable to receive messages.</del>	<del>Broadcast a message by email or fax to all entities that use your authority service. The message should forecast a recovery time for your service. In the meantime, your Interchange Authority Service is down.</del>

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<b>Entity</b>	<b>Connectivity Problem</b>	<b>Backup <u>A</u>actions</b>
Approval Entity	<p>Unable to receive messages from an <del>authority e-Tag</del> <u>Authority Sservice</u>.</p> <p>(The <del>e-Tag Authority sService</del> has an obligation to notify <u>all entities on the e-Tag you</u> and the authoring PSE.</p> <p>The Authoring PSE has an obligation to fax the tag to the <del>failed approval-Approval eEntityer</del>.)</p>	<p>Use the Recovery Process to resynchronize from Authority Services or Central Repository.</p> <p>Telephone the Authority Service entity with the approval or denial of the schedule.</p>
Approval Entity	<p>Unable to send messages to an authority service.</p>	<p>Telephone the Interchange Authority Service Entity with approval or denial of the schedule.</p>
Checkout Partner	<p>Unable to exchange messages.</p>	<p>Telephone net exchange to the checkout partner.</p> <p>Create a backup paper copy of the checkout data and fax to the checkout partner.</p>

Notes:

1. The first action in every case is to attempt to establish connection by using an alternate communication method, a second Internet ~~Sservice~~ Pprovider, dial up connection, or a private network if one is available.
2. Next, the backup actions are attempted in the order specified.
3. The backup actions include printing paper reports from the internal energy management system. The reports include a schedule detail report for a short time period, net exchange between two operational entities, and transmission reservation usage between a transmission provider and a customer.
4. Every backup action list ends with a fax or telephone call that is completely independent of the public Internet.

**Reports**

Three reports have been designed to communicate energy flows and transmission reservation usage between partner entities with a tie where possible back to the schedules as known before the communication failure.

**Net Exchange**

A Net Exchange report is a paper summary of Interchange:

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- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entity and the partner entity are any two entities that share common schedules.
- The date and time are the date and time of the report.
- Net schedules are the net of schedules from and to the other entity.
- TO is a sum of the schedules from the entity to the partner entity.
- FROM is a sum of the schedules from the partner entity to the entity.
- Tag or fragment lines represent the data from each tag or fragment that was known at the time of the failure or has been entered later.
- Recent adjustment lines represent a summary of changes to the schedules that occurred since the failure.

### ***Schedule Detail***

A Schedule Detail report is a paper copy of an individual schedule. It includes:

- The schedule identification number and most current active revision number.
- The fully expanded energy schedule for a period of the current hour to a few hours in the future, up to 24 hours.
- The complete path with all OASIS and contract references.

### ***Reservation Usage***

A transmission Reservation Usage report is a summary of Reservation Usage:

- The time span of the report will cover a period of the current hour to a few hours in the future, up to 24 hours.
- The entities on the report are a transmission provider and a transmission contract holder.
- Gross reservations is the sum of reservations. Usage is the sum of usage.
- The detail lines are tag or fragment usage of reservation, organized by product and OASIS reservation number.

### ***Recovery Process***

The last backup issue is the recovery of current status when the communication link is reestablished. The recovery is accomplished by a query request to the [Interchange e-Tag Authority Service](#) for each entity that the [recovering](#) entity does business with. The query returns a list of all the schedules that reference ~~that the recovering~~ entity with the schedule ID, the current version number, and the last modified date and time.

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The recovering entity then compares the query information with its own database and updates its database to be current with the Interchange e-Tag Authority Service's database. When all Interchange e-Tag Authority services ~~Services~~ have been queried, the recovery is complete.

If the recovering entity desires, it can request a complete audit history of each schedule.

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**004-B Appendix B**

**Transaction e-Tag Actions**

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***For Eastern and Western Interconnections***

The table below explains the various e-Tag actions that are possible, and the entities that are entitled to initiate these actions:

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
Approve a Tag Request	Economic, Reliability, or Contractual	Set Status (to Approved)	Approval Entity*	Approver indicates approval
Deny a Tag Request	Economic, Reliability, or Contractual	Set Status (to Denied)	Approval Entity*	Approval indicates denial
Study a Tag Request	Economic, Reliability, or Contractual	Set Status (to Studied)	Approval Entity*	Approval indicates the tag has been viewed, but have not committed to a decision
Withdraw a Tag Request	Economic	Withdraw Request prior to request implementation	Requesting PSE**	Request is dead
Cancel a New Tag	Economic	Request Profile Change—Set Energy and Capacity for the transaction to zero prior to transaction start	Requesting PSE**	Tag is dead
Terminate a Tag	Economic	Request Profile Change—Set Energy and capacity of the transaction to zero from a point of time forward	Requesting PSE**	Portion of tag is dead
Extend an e-Tag	Economic	Request Profile Change— Append additional hours onto an existing transaction	Requesting PSE**	Tag is extended
Reduce an e-Tag	Economic	Request Profile Change— Decrease Energy flow or Committed	Requesting PSE**, Market Operator***	Profile is Decreased

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<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>
		Transmission Reservation(s) for a transaction for a specific set of hours		
Increase an e-Tag	Economic	Request Profile Change—Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours	Requesting PSE**, Market Operator***	Profile is Increased
Curtail an e-Tag	Reliability (SOL Violation, Loss of Gen, loss of Load)	Request Profile Change—Limit Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator	Profile is Decreased
Reload an e-Tag	SOL Violation eliminated, Generator Returned, Load Returned	Request Profile Change—Release Limit of Energy flow for a transaction for a specific set of hours	Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator	Profile is Increased

<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Approval Needed</b>	<b>Result</b>
<u>Approve a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Approved)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates approval</u>
<u>Deny a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Denied)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates denial</u>
<u>Study a Tag Request</u>	<u>Economic, Reliability, or Contractual</u>	<u>Set Status (to Studied)</u>	<u>Approval Entity*</u>	<u>n/a</u>	<u>Approver indicates the tag has been viewed, but have not committed to a decision</u>
<u>Withdraw a Tag Request</u>	<u>Economic</u>	<u>Withdraw Request prior to request implementation</u>	<u>Requesting PSE**</u>	<u>no</u>	<u>Request is Withdrawn</u>
<u>Cancel an e-New Tag</u>	<u>Economic</u>	<u>Request Profile Change – Set Energy and Capacity for the transaction to zero</u>	<u>Requesting PSE**</u>	<u>yes</u>	<u>The e-Tag is Cancelled</u>

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<b>Desired Policy Action</b>	<b>Reason</b>	<b>Tagging Action</b>	<b>Initiated by</b>	<b>Result</b>	
		<a href="#">prior to transaction start</a>			
<a href="#">Terminate an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Set Energy and capacity of the transaction to zero from a point of time forward</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">The remaining portion of the e-Tag is Terminated</a>
<a href="#">Extend an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Append additional hours onto an existing transaction</a>	<a href="#">Requesting PSE**</a>	<a href="#">yes</a>	<a href="#">Request is approved and the e-Tag is extended</a>
<a href="#">Reduce an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Decrease Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***, Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Market Level Profile and/or Transmission Allocation Profile is decreased</a>
<a href="#">Increase an e-Tag</a>	<a href="#">Economic</a>	<a href="#">Request Profile Change – Increase Energy flow or Committed Transmission Reservation(s) for a transaction for a specific set of hours</a>	<a href="#">Requesting PSE**, Market Operator***</a>	<a href="#">yes</a>	<a href="#">Profile is increased</a>
<a href="#">Curtail an e-Tag</a>	<a href="#">Reliability (TLR, SOL Violation, Loss of Gen, loss of Load)</a>	<a href="#">Request Profile Change – Limit Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator****</a>	<a href="#">yes</a>	<a href="#">Profile is decreased</a>
<a href="#">Reload an e-Tag</a>	<a href="#">SOL Violation eliminated, Generator Returned, Load Returned</a>	<a href="#">Request Profile Change – Release Limit of Energy flow for a transaction for a specific set of hours</a>	<a href="#">Source BA, Sink BA, Transmission Service Provider, Reliability Coordinator</a>	<a href="#">yes</a>	<a href="#">Profile is increased</a>

Notes:

### Comments Submitted by the WEQ JESS

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\*~~Purchasing-Selling Entities~~GPEs, LSEs, and ~~Load-Serving Entities~~TPSEs may elect to defer their approval rights to the Host Balancing Authority of their facilities. For more information, see PSE and LSE approval rights below

\*\*In some situations, Balancing Authorities implement certain Interchange Transactions or Interchange Schedules, such as bilateral inadvertent payback, Dynamic Schedules, and ~~E~~emergency ~~S~~schedules from Reserve Sharing Groups. In these situations, the Balancing Authority serves as the Purchasing-Selling Entity and can perform these actions.

\*\*\*Entities registered as market operators and serving as either source or sink for a Transaction may exercise such functions in order to indicate correct flow based on market clearing.

\*\*\*\*With the addition of Source BA, Sink BA, Transmission Service Provider, and Reliability Coordinator to the list of entities available to reduce e-Tag energy and transmission profiles, those entities will use that function for any non-reliability market operations as necessary. The curtailment option will only be used for the reliability reasons as described. The curtailment issuer should include the reason for the action in their request for the profile change.

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~~\*\*\*With the addition of Source BA, Sink BA, Transmission Service Provider and Reliability Coordinator to the list of entities available to reduce E-Tag energy and transmission profiles, those entities will use that function for any non-reliability market operations as necessary. The curtailment option will only be used for the reliability reasons as described. The curtailment issuer should include the reason for the action in their request for the profile change.~~

**PSE and LSE Approval Rights**

~~Purchasing-Selling Entities providing generation-Generation Providing Entities (GPE) and-, Load-Serving Entities (LSE), and Transmission Purchasing-Selling Entities (TPSE) have been granted the right, but not the obligation, to approve Transaction requests usingciting their resources. Only GPE's who are capable of controlling the output of the source generator should be allowedA GPE (for Sources) or a LSE (for Sinks) can specify an alternate approval rights-entity in the Master Registry. If PSEsGPEs and LSEs specify an approval service in the Master Registry, then they are expected to approve/deny Transactions when so requested. Otherwise, their Host Balancing Authority is expected to act on their behalf. -The following table illustrates the proper way to interpret this requirement:~~

<b>If the PSE...GPE or LSE...</b>	<b>Specified an <u>alternate Approval URL</u>Entity</b>	<b>The <del>PSE should be granted</del><u>alternate entity</u> has rights to approve or deny</b>
	<b>Did not specifySpecified an Approval URL</b>	<b>The BA should have proxy approval rights for the PSEThe PSE has rights to approve or deny</b>
	<b>Did not specify an <u>Approval URL</u></b>	<b>The Host BA should have proxy approval rights for the PSE</b>

Comments Submitted by the WEQ JESS

NAESB WEQ Coordinate Interchange Standards – WEQ-004

**004-C Appendix C – Data Submission and Modifications**

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**A. Required and Correctable e-Tag Data**

**A. for New Interchange Transactions**

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A new Interchange transaction is an Arranged Interchange (e-Tag) that has not yet been approved or confirmed for implementation. Such Arranged Interchange must be presented to those Approval Entities (as e-Tag) that are responsible for the implementation of the Interchange transaction in order that they may evaluate the e-Tag and determine whether or not the Interchange can be implemented.

The following information describes what is to be used to describe required and what is correctable in such ~~an~~Request For Interchange ~~transaction.~~

(RFI). “Correctable” as used below indicates a field that may be modified by the RFI author prior to a RFI reaching a composite state of CONFIRMED. The lack of this term below indicates that the field is not correctable. “Required” as used below indicates a field must be populated with data in order for the RFI to be considered valid. The lack of this term indicates that the field is not required.

**1. Market Information**

**1.1. RESERVED**

**1.2.** Financial Path (Required) – the description of financially responsible parties for the Interchange in order. This will typically start with a Purchasing-Selling Entity providing generation (GPE) and finish with a Load Serving Entity (LSE), and where applicable, intermediate Purchasing-Selling Entities between the two.

**1.2.1.** Energy Title Holder(s) (Required) – the identity of the entities financially responsible to take and/or deliver the energy as described in the physical path. This will typically be a Purchasing-Selling Entity providing generation (GPE), a Load Serving Entity (LSE), and where applicable, Intermediate Purchasing-Selling Entities.

**1.2.1.1.** Energy Product Type (Required) (Correctable) – the type of energy delivered by the Energy Title Holder.

~~1.2.1.3.~~**1.2.1.2.** Contract Number(s) (Correctable) – reference to a Transaction entered into by the Energy Title Holder with one or more other participants in the Transaction.

~~1.2.1.4.~~**1.2.1.3.** Miscellaneous Information (Correctable) – information provided at the Requesting PSE’s option regarding the Transaction.

**2. Physical Information**

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- 2.1. Physical Path (Required) – the description of physically scheduling parties for the Interchange in order and related to the financially responsible parties described above. This will always contain a Generation segment, at least one Transmission segment, and a Load segment.
  - 2.1.1. Generation (Required) – set of data describing the physical and contractual characteristics of the energy source.
    - 2.1.1.1. Source (Required) – the physical point at which the energy is being generated. This may vary in granularity, dependent on local business practices.
    - 2.1.1.2. Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Purchasing-Selling Entity providing generation (GPE) and the Generator Operator.
    - 2.1.1.3. Miscellaneous Information (Correctable) – information provided at the Requesting PSE's option regarding the Interchange Transaction.
    - 2.1.1.4. Energy Profile (Required) – energy to be produced by the Generator Operator for this Transaction.
  - 2.1.2. Transmission (Required) – set of data describing the physical and contractual characteristics of a wheel (import, export, through, etc.).
    - 2.1.2.1. Transmission Service Provider (Required) – the identity of the transmission provider that is wheeling the energy.
    - 2.1.2.2. Point of Receipt (Required) (Correctable) – valid Point of Receipt for scheduled Transmission Reservation.
    - 2.1.2.3. Point of Delivery (Required) (Correctable) – valid Point of Delivery for scheduled Transmission Reservation.
    - 2.1.2.4. Scheduling Entities (~~Correctable~~Required in Western Interconnection) – entity that is physically scheduling interchange on behalf of the Transmission Service Provider in order to provide wheeling services. Typically this is the Balancing Authority for the Transmission Service Provider, but may be several Balancing Authorities supporting a regional transmission service. If the Scheduling Entity code for the physical segment is not identical to the Transmission Service Provider (TSP) code on that physical segment, the Scheduling Entity code must be explicitly specified or required. ~~This field is required for the Western Interconnect.~~
    - 2.1.2.5. Loss Provision Information (Required) (Correctable)– information describing the manner in which losses are accounted when they are not scheduled as in-kind megawatt distributions through the original transaction. Types may be financial (paid in dollars based on tariff provisions), internal (scheduled in megawatts to the Transmission Service Provider from a resource inside the Transmission Service Provider's area), or external (scheduled in megawatts to the Transmission Service Provider from a resource outside the Transmission Provider's area). If internal or external, must specify contract numbers or Transaction IDs.

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- 2.1.2.6. Miscellaneous Information (Correctable) – information provided at the Requesting PSE's option regarding the transaction.
- 2.1.2.7. POR and POD Profiles (Required) – schedule of Energy Flow imported at the Point of Receipt and exported at the Point of Delivery.
- 2.1.2.8. Transmission Reservation Number(s) (Required) (Correctable) – reference to a particular transmission reservation being used to provide transmission capacity to support the transaction being described.
- 2.1.2.9. Transmission Product (Required) (Correctable) – Specifies the firmness of service associated with the transmission reservation being used.
- 2.1.2.10. Requesting PSE (Required) (Correctable) – identifies the entity that purchased and holds the transmission reservation being presented for use.
- 2.1.2.11. Transmission Allocation Profile (Required) – profile of transmission reservation allocated by the Requesting Purchasing-Selling Entity for use for this Transaction.
- 2.1.3. Load (Required) – set of data describing the physical and contractual characteristics of the energy sink.
  - 2.1.3.1. Sink (Required) – the physical point at which the energy is being consumed. This may vary in granularity, dependent on local business practices.
  - 2.1.3.2. Contract Number(s) (Correctable) – reference to a schedule or agreement entered into by the Load Serving Entity and the distribution provider.
  - 2.1.3.3. Miscellaneous Information (Correctable) – information provided at the requesting PSE's option regarding the Transaction.
  - 2.1.3.4. Energy Profile (Required) – energy to be consumed by the load for this Transaction.

### ~~Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction~~

~~The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:~~

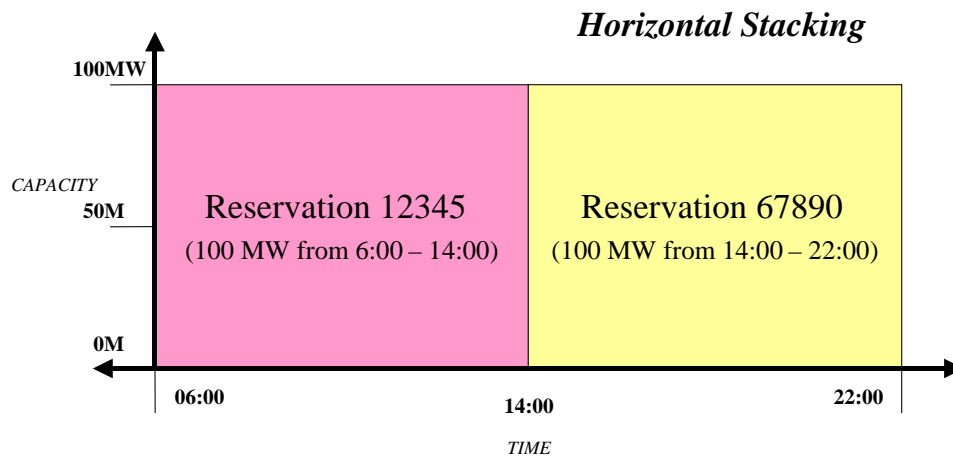
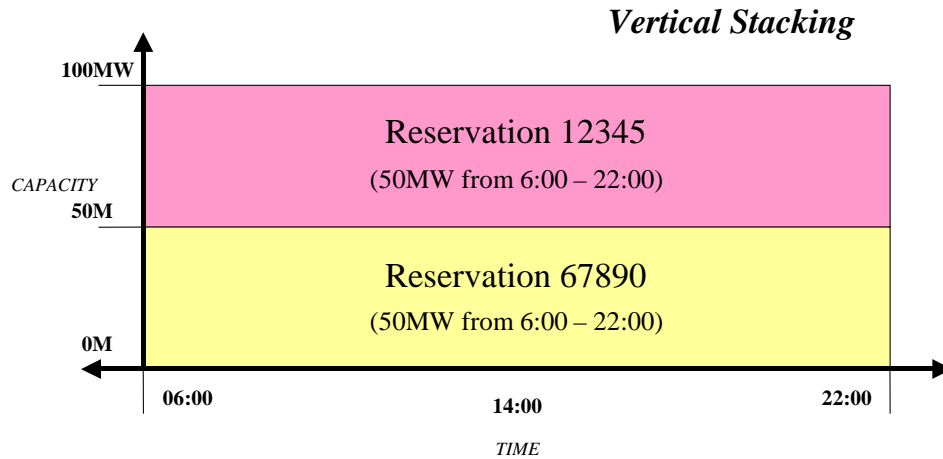
~~Vertical stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain net level of transmission capacity, and~~

~~Horizontal stacking, in which a Requesting Purchasing-Selling Entity combines multiple reservations to achieve a certain transmission capacity coverage over time.~~

**Comments Submitted by the WEQ JESS**

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The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their INTERCHANGE TRANSACTION, they must understand the following requirements:

Stacks MUST be described through fully qualified profiles for each reservation being used.

At no point may the coverage described by the stack be less than the transmission capacity needed for the TRANSACTION'S energy flow.

## Comments Submitted by the WEQ JESS

NAESB WEQ Coordinate Interchange Standards – WEQ-004

### **B. Curtailments and Reloads (Reliability Related Profile Modifications)**

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Curtailments and Reloads are special kinds of modifications to an Interchange transaction's energy profile based on reliability concerns. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the transaction request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The TRANSACTION being curtailed or reloaded,
- All necessary profile changes to set the maximum flow allowed for the transaction during the appropriate hours,
- A contact person that initiated the curtailment or reload, and
- A description of the necessity for the schedule change.

### **C. Market-Related Profile Modifications**

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Profile Modifications are changes to an Interchange TRANSACTION'S energy profile based on market desires. Such modifications must be presented to those entities that are responsible for the implementation of the modification in order that they may evaluate the Interchange TRANSACTION request and determine whether or not the modification can be implemented. The following information must be used to describe such a modification.

- The Interchange TRANSACTION being modified,
- All necessary profile changes to set the transmission capacity or energy flow to the desired levels during the appropriate hours, and
- A contact person that initiated the modification.

### **D. Transmission Stacking**

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#### **Using Multiple Transmission Reservations to Support a Single Leg of an Interchange Transaction**

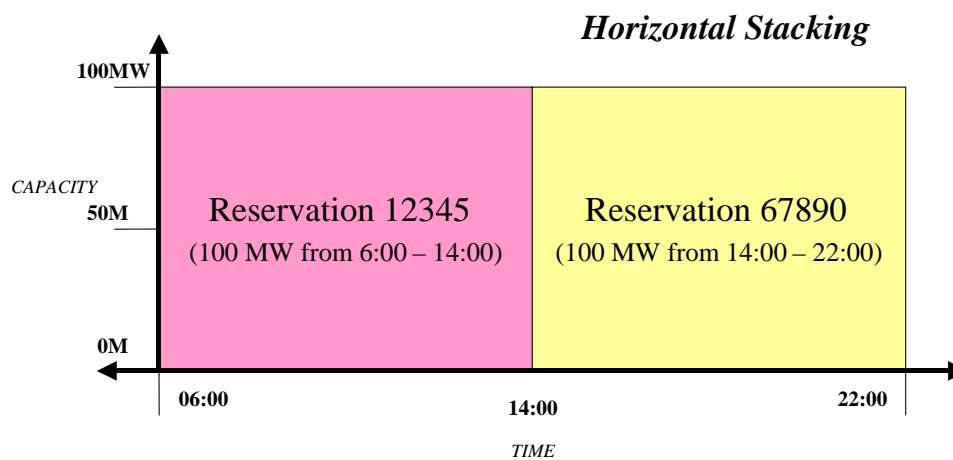
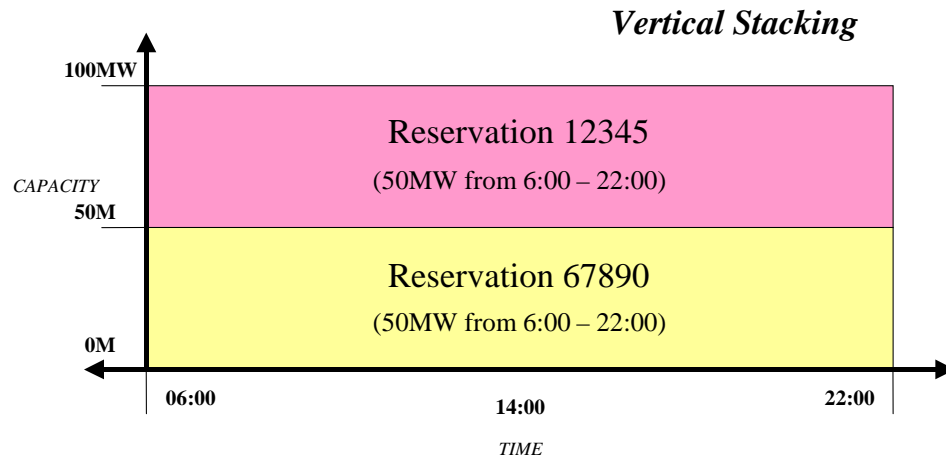
The use of multiple transmission reservations to support a single leg of an Interchange Transaction is known as transmission stacking. There are two types of transmission stacking:

- Vertical stacking, in which a Requesting PSE combines multiple reservations to achieve a certain net level of transmission capacity, and
- Horizontal stacking, in which a Requesting PSE combines multiple reservations to achieve a certain transmission capacity coverage over time.

**Comments Submitted by the WEQ JESS**

NAESB WEQ Coordinate Interchange Standards – WEQ-004

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



Should a Requesting PSE elect to utilize stacking, including any combination of the two stacking types, to support their Interchange Transaction, they must understand the following requirements:

- Stacks MUST be described through fully qualified profiles for each reservation being used.
- At no point may the coverage described by the stack be less than the transmission capacity needed for the Transaction's energy flow.

## 004-D Appendix D – Commercial Timing Tables

### Timing Requirements for all Interconnections except WECC

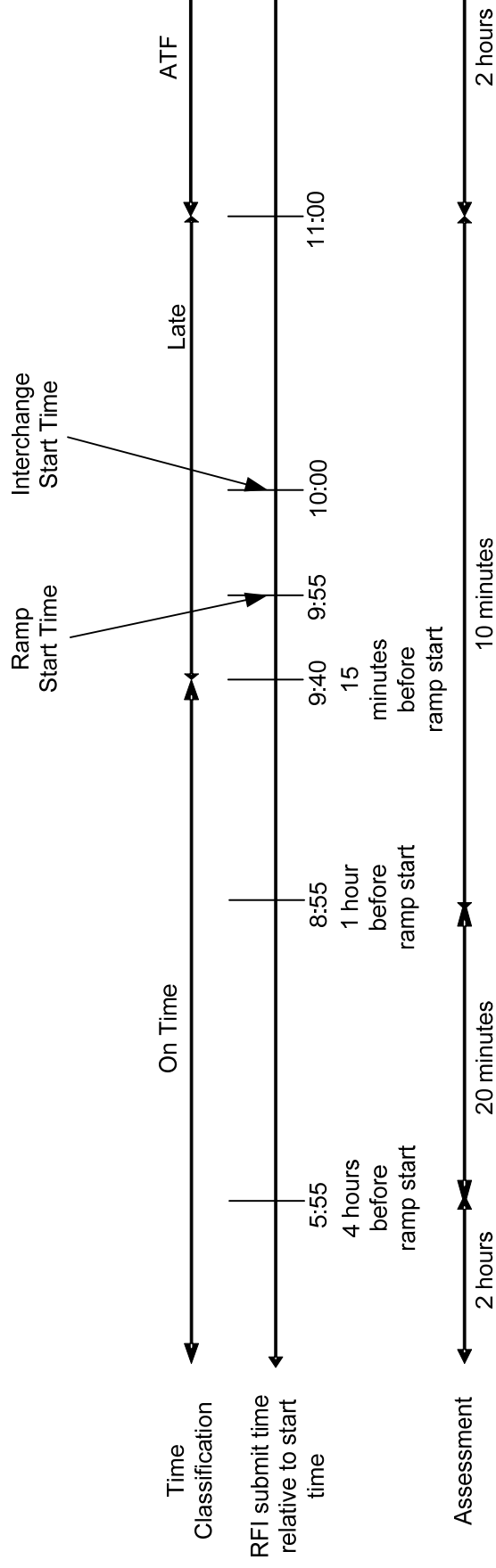
	A	B	C	D
If Actual Arranged Interchange (RFI) <sup>1</sup> is Submitted	IA Assigned Time Classification	GPE, LSE, and PSE <sup>2</sup> Conduct Market Assessments <sup>3</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
> 1 hour after the RFI start time	<u>After-the-Fact</u>	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
< 15 minutes prior to ramp start and ≤ 1 hour after the RFI start time	<u>Late</u>	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
< 1 hour and ≥ 15 minutes prior to ramp start	<u>On-time</u>	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥ 1 hour and < 4 hours prior to ramp start	<u>On-time</u>	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	<u>On-time</u>	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

1 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

2 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

3 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

**Example of Timing Requirements for all Interconnections except WECC**



Timing Requirements for WECC

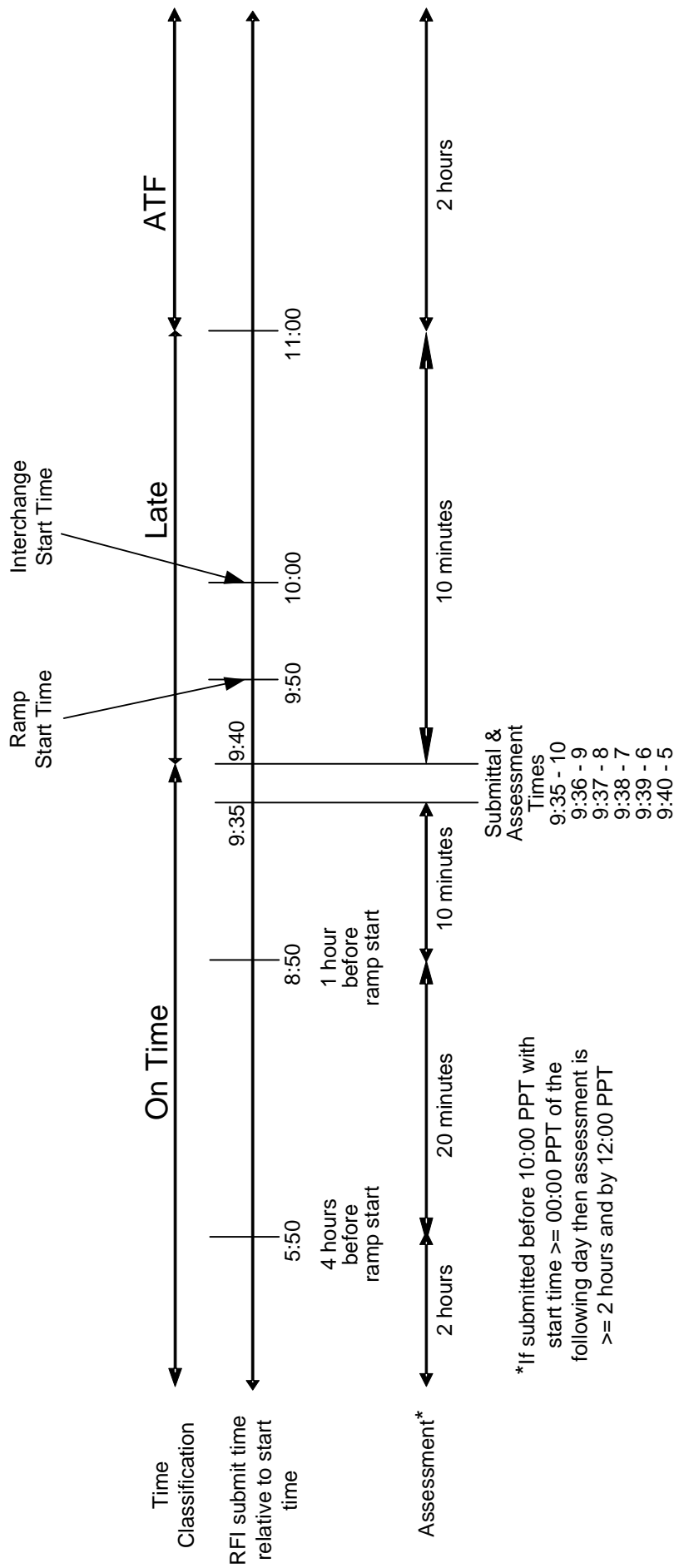
	A	B	C	D
	IA Assigns Time Classification	GPE, LSE, and PSE <sup>5</sup> Conduct Market Assessments <sup>6</sup>	IA Compiles and Distributes Status	BA Prepares Confirmed Interchange for Implementation
If Actual Arranged Interchange (RFI) <sup>4</sup> is Submitted	IA Makes Initial Distribution of Arranged Interchange			
>1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 2 hours to respond.	≤ 1 minute from receipt of all Reliability Assessments	NA
<10 minutes prior to ramp start and <1 hour after the start time	≤ 1 minute from RFI submission	Entities have up to 10 minutes to respond.	≤ 1 minute from receipt of all Reliability Assessments	≤ 3 minutes after receipt of confirmed RFI
10 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 5 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
11 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 6 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
12 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 7 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
13 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 8 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
14 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 9 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
<1 hour and ≥ 15 minutes prior to ramp start	≤ 1 minute from RFI submission	≤ 10 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 3 minutes prior to ramp start
≥1 hour and < 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 20 minutes from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 39 minutes prior to ramp start
≥ 4 hours prior to ramp start	≤ 1 minute from RFI submission	≤ 2 hours from Arranged Interchange receipt from IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start
Submitted before 10:00 PPT with start time ≥ 00:00 PPT of following day	≤ 1 minute from RFI submission	By 12:00 PPT of day the Arranged Interchange was received by the IA	≤ 1 minute from receipt of all Reliability Assessments	≥ 1 hour 58 minutes prior to ramp start

4 Time Classifications and deadlines apply to both initial Arranged Interchange submittal and any subsequent modifications to Arranged Interchange.

5 This PSE reference applies to PSEs whose transmission rights are cited on Arranged Interchange.

6 These Market Assessments take place in concurrence with NERC Reliability Assessments (as found in NERC INT-005-3).

Example of Timing Requirements for WECC





## Minor Correction Request

**Quadrant:** Wholesale Electric Quadrant (WEQ)  
**Business Practice:** Remove Content of WEQ-001-1.0  
**Submitted By:** JT Wood  
**Date:** October 15, 2009

### Request

Southern Company is requesting that the WEQ Executive Committee delete the content of WEQ-001-1.0 as a minor correction. We believe deleting this section meets the criteria of a minor correction based upon FERC actions and prior actions taken by the WEQ Executive Committee.

According to the NASB Operating Practices Minor Corrections include:

- (a) clarifications or corrections made by a regulatory agency to standards that are of a jurisdictional nature, or by the American National Standards Institute or its successor;*
- (b) clarifications or corrections to the format, appearance, or descriptions of standards in standards documentation;*
- (c) clarifications or corrections to add code values to tables; and*
- (d) clarifications and corrections that do not materially change a standard.*

### Background FERC Actions:

On May 9, 2005, the Commission issued its Notice of Proposed Rulemaking (NOPR) R05-005-000 Standards for Business Practices and Commission Protocols for Public Utilities. Paragraph 25 states:

*With the exception of standards, discussed below, involving standards that duplicate the requirements in our regulations (OASIS Business Practice Standard 1, including Standards 1.1 through 1.8, and in the Definitions of "Affiliate," "Responsible party," "Reseller," "Transmission Provider," "Transmission Customer," and "Wholesale merchant function"), we believe that the WEQ's OASIS Business Practice Standards are consistent with the Commission's existing standards on this topic.<sup>1</sup>*

On April 26, 2005, the Commission issued Order Number 676 incorporating by reference the WEQ NAESB Business Practices Version 0. This Final Rule did not incorporate WEQ-001-1.0 as documented in paragraph 19:

*The specific standards developed by the WEQ that we are incorporating by reference in this Final Rule are as follows:*

*Business Practices for Open Access Same-Time Information Systems (OASIS) (WEQ-001, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 001-0.2 through 001-0.8, 001-2.0*

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<sup>1</sup> In addition, although we are proposing to incorporate by reference OASIS Business Practice Standard 10.6, we have problems with this provision that we are asking commenters to address in their comments on this NOPR.

*through 001-9.6.2, 001-9.8 through 001-10.8.6, and Examples 001-8.3-A, 001-9.2-A, 001-10.2-A, 001-9.3-A, 001-10.3-A, 001-9.4.1-A, 001-10.4.1-A, 001-9.4.2-A, 001-10.4.2-A, 001-9.5-A, 001-10.5-A, 001-9.5.1-A, and 001-10.5.1-A;*

On July 21, 2008, the Commission issued Order Number 676-C incorporating by reference the WEQ NAESB Business Practices Version 1. This Final Rule also did not incorporate WEQ-001-1.0 as documented in paragraph 9:

*The specific NAESB standards that we are incorporating by reference in this Final Rule are:*

*Business Practices for Open Access Same-Time Information Systems (OASIS), Version 1.4 (WEQ-001, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 001-0.2 through 001-0.8, 001-0.14 through 001-0.20, 001-2.0 through 001-9.6.2, 001-9.8 through 001-12.5.2, and 001-A and 001-B;<sup>2</sup>*

### **Background WEQ Executive Committee Actions:**

On October 15, 2007, the WEQ Executive Committee met via conference call and determine the change to remove all of WEQ-009 could be done under a minor correction citing Order 676 where the Commission determined they would not include WEQ-009 in the Final Rule “because they duplicate the Commission’s regulation on this subject” as noted in paragraph 72. The “Minor Correction to NAESB WEQ-009 Standards of Conduct” dated October 17, 2007, provides additional detail on the WEQ Executive Committee’s action [http://www.naesb.org/pdf3/weq\\_mc101707weq009.doc](http://www.naesb.org/pdf3/weq_mc101707weq009.doc).

On May 12, 2009, the WEQ Executive Committee met in Carmel, Indiana and determine the change to remove sections of WEQ-001-1.5 through 1.8 could be done under a minor correction citing the Order 676 and 676-C where the Commission determined they would not adopt these requirements. The “WEQ Executive Committee Meeting Final Minutes” dated May 12, 2009, provides additional detail on the WEQ Executive Committee’s action [http://www.naesb.org/pdf4/weq\\_ec051209fm.doc](http://www.naesb.org/pdf4/weq_ec051209fm.doc).

### **Summary:**

Based on the references cited above, removing the content of WEQ-001-1.0 meets the criteria for a minor correction based on precedence established by the WEQ Executive Committee in 2007 and 2009. With this minor correction we are requesting that the WEQ Executive Committee take a similar action on the WEQ-001-1.0 requirement as it did with the WEQ-009 and WEQ-001-1.5 through 1.8 requirements which were not incorporated in either FERC Orders 676 or 676-C.

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<sup>2</sup> The WEQ Version 001 package of standards includes Version 1.4 of the OASIS Standards. The reference to Version 1.4 is based on the fact that this is the fourth set of revisions to the Version 1.0 OASIS Standards that the Commission adopted in Order No. 889. Open Access Same-Time Information System and Standards of Conduct, 61 FR 21,737 (May 10, 1996), FERC Stats. & Regs. ¶ 31,035 (April 24, 1996). The Version 1.4 reference appears in Standards WEQ-001, WEQ-002, WEQ-003, and WEQ-013.



## North American Energy Standards Board

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**October 15, 2009**

**Via email and posting**

**TO:** NAESB Executive Committee (EC) Members  
**FROM:** NAESB Office  
**cc:** EC Alternates, Micki Schmitz, Mike Schisler  
**RE:** NAESB Triage Actions Pending for R09014 to R09019

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Dear Triage Subcommittee and EC members,

We have several requests to triage – R09014 to R09019 -- all provided below as hyperlinks. The NAESB office recommends the following actions:

For [R09014](#), submitted by [Valerie Crockett](#) on behalf of Tennessee Valley Authority:

This request is (1) found within scope; (2) to be assigned to the Wholesale Gas Quadrant (WGQ); and (3) because it is a request to create a section/heading under Informational Postings called Regulatory to include all filings made to the FERC, the request should be assigned to the WGQ Business Practices Subcommittee (BPS). There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WGQ BPS.

For [R09015](#), submitted by [Robert Harshbarger](#) on behalf of Puget Sound Energy:

This request is (1) found within scope; (2) to be assigned to the Wholesale Electric Quadrant (WEQ); and (3) because it is a request to create a new OASIS mechanism that allows for the merger of like reservations without the use of the resale mechanism, the request should be assigned to the WEQ OASIS Subcommittee (OASIS). There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WEQ OASIS.

For [R09016](#), submitted by [Micki Schmitz](#) on behalf of Northern Natural Gas:

This request is (1) found within scope; (2) to be assigned to the Wholesale Gas Quadrant (WGQ); and (3) because it is a request to add Rate Schedule data element to the Bid Upload and Bid Download datasets and change conditionality of Location data for Offer Upload/Download datasets or add code values to allow a dummy agenda, the request should be assigned to the WGQ BPS. There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WGQ BPS.

For [R09017](#), submitted by [Keith Sappenfield](#) on behalf of the WGQ Contracts Subcommittee:

This request is (1) found within scope; (2) to be assigned to the Wholesale Gas Quadrant (WGQ); and (3) because it is a request to develop a new ISDA Gas Confirmation Form for use with the ISDA Gas Annex based on the current Confirmation Form under the NAESB Base Contract for Sale and Purchase of Natural Gas, the request should be assigned to the WGQ Contracts Subcommittee. There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WGQ Contracts Subcommittee.

For [R09018](#), submitted by [Mike Schisler](#) on behalf of NGLP:

This request is (1) found within scope; (2) to be assigned to the Wholesale Gas Quadrant (WGQ); and (3) because it is a request to add a new MA data element to the Nominations dataset for Model "T" called "Path Rank", the request should be assigned to the WGQ BPS. There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WGQ BPS.



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For [R09019](#), submitted by [Mike Schisler](#) on behalf of NGPL:

This request is (1) found within scope; (2) to be assigned to the Wholesale Gas Quadrant (WGQ); and (3) because it is a request to create two additional Allocation Transaction Type codes to improve the reporting of Pathed Non-Threaded levels of detail in the Allocation Statement, the request should be assigned to the WGQ Business Practices Subcommittee (BPS). There was nothing in the request indicating that it should be assigned a high priority, therefore, it should be addressed in the normal course of business of the WGQ BPS.

If you have any questions on a specific request, please contact the requestor directly -- their email addresses are provided as links with the requests. If you have any concerns on the above actions, please respond via email with your concern stated, and we will convene a conference call for its resolution. If no concerns are raised, then on October 30, triage notes will be posted on the NAESB web site indicating that the Triage Subcommittee and the EC agrees with the above actions, and the requests will be forwarded to the chairs of the subcommittees to which they have been assigned.

# Business Practices Subcommittee Update

October 27, 2009

## WEQ BPS Update

- Meetings
  - September 14, 2009
  - September 28, 2009
  - October 21, 2009
- Accomplishments
  - Approved recommendation to address annual plan items
    - 5.a.2 Gas / Electric Communication Consistency Changes (R08004)
    - 5.i Change Power Plant Operator to Power Plant Gas Coordinator (R09011)
    - Addresses consistency of definitions/terms between WEQ and WGO
    - Expected to complete in 4<sup>th</sup> quarter (completed end of 3<sup>rd</sup> quarter)

## Current Assignments

- WEQ AP Item 1.b.i “Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection”
  - Highlights of October 21 Meeting
    - Overview of the Merits of Parallel Flow Visualization
    - Future NERC/NAESB Coordination for this Project
    - Received Update on NERC Operating Reliability Subcommittee (ORS) Activity Related to Parallel Flow Visualization
    - Reviewed Presentation Made by NERC IDC Working Group to NERC ORS Regarding Minimum Data Requirements to Support Parallel Flow Visualization
    - Initiated Concept Based Discussion of Commercial/Equity Issues Related to Parallel Flow Visualization (for example, generation priority) with Assignments

# Joint NERC TLRSDT / NAESB BPS Update

- Meetings
  - August 25, 2009
- Market Flow Threshold Recommendation
  - Approvals
    - Market Flow Threshold Task Force (September 1, 2009)
    - Operations Reliability Subcommittee (September 1, 2009)
  - Presentations
    - Operating Committee (September 15, 2009)
    - Standards Committee (October 7, 2009)
- Ongoing Coordination
  - Posting revised draft standards IRO-006.5 and IRO-006-EAST.1 is pending
- Upcoming Activities
  - Review comments to proposed standards IRO-006.5 and IRO-006-EAST.1
  - Post response to comments based on review of comments standards may be posted Initial Ballot
- Note:
  - EPSA, NRG, and Constellation received request for rehearing on NERC TLR Standards (awaiting FERC Order)

## Joint NERC BACSDT / NAESB TIMTF Update

- Meetings
  - August 27, 2009
  - September 30, 2009
  - October 20-21, 2009
- NERC/NAESB Conference Call October 5, 2009
  - Agreed to NAESB monitoring position until NERC is further along in their standards development process.

# Questions/Feedback

- WEQ/WGQ discussion on triage of interpretations
  - INT-001 related to WEQ and WGQ Business Practices  
WGQ was not involved (should they have been involved/notified)
  - Potential changes in future
    - Demand Response
    - e-Tariff

1 MS. YORK: Move to provisional.

2 MS. MCQUADE: So, we changed D and E and  
3 we're moving F to provisional.

4 MS. YORK: Other changes, Ed?

5 MR. SKIBA: That was all.

6 MS. YORK: Thanks. Matt.

7 MR. GOLDBERG: I guess I want to raise this  
8 first as a question rather than promote a particular  
9 view for our discussion. What I'm reflecting on here  
10 is an email that went out from Aaron, EnerNOC, on  
11 Monday regarding additional work that might be on the  
12 business practices to support Demand Response and DSM  
13 and Energy Efficiency programs. It's a comment and,  
14 Aaron, I presume, you're still on the phone.

15 MS. YORK: He's in the room.

16 MR. GOLDBERG: Thanks. I think in substance  
17 appears to be that NAESB -- it would be good to  
18 memorialize that NAESB is intending to do more work on  
19 this. It seems like that is a timely one for  
20 preparing what goes into the Annual Plan. As I look  
21 at the Annual Plan, though, looking at more about  
22 Item 4, there's a number of things already on the plan  
23 for further steps and I suppose, I guess, I want to  
24 discuss and question, do any of those steps address --  
25 already address what you were intending to see NAESB

1 memorialize and if not, why not -- well, depending on  
2 the answer, so why don't we start with that.

3 MR. BREIDENBAUGH: Thank you, Aaron  
4 Breidenbaugh, EnerNOC; and I almost asked Kathy to  
5 swap the two agenda items because the discussion that  
6 I think we're going to have in the next item relating  
7 to DSM-EE efforts would be a good preamble to a  
8 recommendation for an addition to the Annual Plan, and  
9 I don't know. I just -- I didn't do that. I suppose  
10 we can handle it any number of ways. I actually have  
11 some suggested language for the Annual Plan that I was  
12 going to offer up -- had you not spoken I was going  
13 to -- I was going to state that so thanks for giving  
14 me a nice intro to that.

15 My only concern is that offering up that  
16 language without the benefit of the discussion about  
17 why we need to do more that will come in the next  
18 section might be premature.

19 MR. GOLDBERG: Let me jump in. Why are we  
20 waiting? If the key item is thinking how to key up  
21 additional work, why would we wait until Item 9?

22 MS. MCQUADE: So, we're going to just do 9b  
23 now?

24 MR. BREIDENBAUGH: Yeah, with the permission  
25 or -- and request of the Chair, I would ask that we go

1 to 9b now.

2 MR. GOLDBERG: I just want to be clear on  
3 form. I'm -- at least the way we would view this is a  
4 potential amendment to the Annual Plan. Are you  
5 comfortable raising it as that?

6 MR. BREIDENBAUGH: Yeah, I'm going to make  
7 an amendment. It's just that it's sort of easier to  
8 do it with the intro associated with the Item 9, and  
9 you want me to go ahead?

10 MS. YORK: Yes.

11 MR. BREIDENBAUGH: So, Item 9 relates to  
12 recommendations that is actually currently in voting.  
13 Provisional ballots went out, I think, on Wednesday  
14 within last week. We had a meeting and by the end of  
15 it, there was insufficient number of people to carry  
16 it forward. So, the principle -- there was a number  
17 of amendments that were made, all but I think one of  
18 them friendly to the proposal that came out of the  
19 subcommittee and one of the -- one of the items, and  
20 the most important from our standpoint, was the fact  
21 that the original recommendation that was -- that was  
22 by no means uncontentious, if that's a word, that came  
23 out of the subcommittee was the use of the word  
24 "framework" in the title of the recommendation and  
25 that was driven in a large part by the fact that there

1 are a number of parties that participated in the  
2 subcommittee. I think I'm speaking for them, but  
3 mainly for myself is that the product that is, you  
4 know, pending now and is in balloting is a valuable  
5 product. It's a great starting place. It lays out,  
6 you know, in good detail sort of how to -- how to  
7 discuss issues related to DR Energy, glossaries, sort  
8 of just ways of considering the issues.

9           Unfortunately it -- and I think the actual  
10 count might be 149 to now 150 -- uses the term  
11 either "discretion of the system operator" or some  
12 variant of that really as a -- in our minds, a  
13 substitute for actual standards. Basically, I think  
14 it's fair to characterize it says the standard is,  
15 in fact, whatever the local system operator says it  
16 is and in this context the system operator is --  
17 because one of the other changes was to limit it  
18 only to ISO and RTOs, that essentially whatever the  
19 ISO/RTO says, and it just basically defers what we  
20 would consider to be most of the sort of meat and  
21 potatoes to the technical standard to whatever it is  
22 the system operators come up with.

23           And, you know, I guess it's not surprising  
24 that the system operators have their own processes  
25 and constituency prerogatives that they want to

1 maintain. So, I understand it; but as far as a set  
2 of technical standards that provide a valuable road  
3 map to somebody who is trying to put together an M&V  
4 program for Demand Response, let's say in this case  
5 maybe it's a new ISO like MISO, for example, or some  
6 other independent system operator, the consistent --  
7 the constant reference to "system operator  
8 preferences" doesn't really provide a lot of  
9 guidance.

10 So, we think it's a good framework. It's  
11 a good starting point, but it's not an end. The  
12 analogy, you know me I like analogies, the analogy  
13 is, you know, we have cars and we've determined that  
14 they can go forward and backward and left and right  
15 and they should have accelerators. That's a good  
16 thing and, you know, that there should be roads, but  
17 we don't have anything that says there should be  
18 traffic signs or that there should be lanes in the  
19 roads, you know, that maybe it's not a good idea for  
20 people to drive in both directions on the same side  
21 of the road and that's the kind of thing that we  
22 need in here.

23 I mean, we defined sort of these five  
24 basics ways of measuring demand response  
25 performance; but, you know, we've got enough

1 experience now and we're active in every ISO  
2 footprint and most of the utilities that have  
3 programs. We have enough experience that a lot of  
4 them don't work very well and others work really  
5 well and we'd like to try to put something out there  
6 or NAESB to put out something that allows people to  
7 avoid the mistakes of the past and to recreate or  
8 perpetuate some of the successes.

9           So, we just think there needs to be a  
10 follow-on process to do that. Given that the  
11 balloting is going on now there is nothing we can do  
12 to change the actual standard itself, which I  
13 suspect will pass, and with the addition of the  
14 language we have suggested in the items here would  
15 recommend passing. I mean, if I could -- if that  
16 language was in there; and I could change my vote to  
17 yes, I would do so. I don't think I can.

18           MR. GOLDBERG: Where I thought you were  
19 going to go with this was suggest that the Annual Plan  
20 reflect additional development.

21           MR. BREIDENBAUGH: I have language for that,  
22 but we're on 9A now, not the Annual Plan piece. The  
23 recommendation --

24           MR. GOLDBERG: I'm sorry, I don't know why  
25 you're -- what I'm having trouble understanding, quite

1 frankly, is why you keep reverting to -- the issue  
2 seems -- tell me if I'm misunderstanding this.

3 MS. YORK: Matt, this is Kathy. We asked  
4 him to give us a discussion on this as to why he was  
5 asking for an Annual Plan addition. So, we gave him  
6 permission in the room to do this, to discuss Item 9  
7 and what he had sent out to the WEQ EC members as the  
8 recommended language to the proposal so that he could  
9 get to the part of actually maybe a recommendation for  
10 the Annual Plan addition.

11 MR. GOLDBERG: Okay.

12 MS. YORK: I just want to clarify, you  
13 probably didn't hear us in the room; but I did give  
14 him the nod to do that.

15 MR. GOLDBERG: Okay. But maybe I'm  
16 belaboring the point. The point of the discussion is  
17 whether or not the Annual Plan should be updated or  
18 amended. Is that the point of this -- I mean.

19 MR. BREIDENBAUGH: Ultimately, yes.  
20 Ultimately to effectuate whatever we say in some sort  
21 of preamble to the vote or things that goes along with  
22 the filing report to FERC. If it says we need to do  
23 more work, the place where the work is going to get  
24 tasked out is in the Annual Plan, and I was unaware  
25 until I got to this meeting that we were entertaining

1 additions to the Annual Plan. Otherwise, instead of  
2 recommending some fluffy language around the filing  
3 letter, I would have recommended substantive changes,  
4 which I actually have now for people's consideration.

5 MR. GOLDBERG: For whatever it's worth I  
6 looked at the language in the email and I have issues.  
7 I was concerned about it or reservations about  
8 entertaining that as something that would be a part of  
9 a filing to FERC, but I think that -- but it's very  
10 useful for the Annual Plan. Now, it's your decision  
11 ultimately about how you want to proceed forward and  
12 how to do -- someone else would say it's too late for  
13 you to make an amendment to the Annual Plan because of  
14 the way this was agendaed, but I guess what I'm  
15 suggesting is that discussion might be more fruitful  
16 using it at an Annual Plan Amendment than as language  
17 to append to the FERC filing.

18 MR. BREIDENBAUGH: Which I will make if I  
19 can.

20 MS. YORK: Go ahead.

21 MR. BREIDENBAUGH: What I was going to  
22 propose initially was that where Item 4B exists now,  
23 you would insert -- and I'm not quite sure exactly  
24 what B was appended to. So, we could either make it  
25 Amendment to B or insert a new item. My first

1 suggestion was a new item that would go right after A,  
2 because A is what we are, you know, in the process of  
3 voting on right now; and it would be something along  
4 the lines of this. "Develop Technical Standards for  
5 the Measurement Verification of Demand Response  
6 Programs in ISO/RTO footprint areas." And I use the  
7 term "technical standards" because that's the one that  
8 I heard most frequently in saying that what is  
9 presently pending before the group is not, but I'm not  
10 sure that everybody would even agree with that  
11 characterization.

12 What I'm trying to get at is best  
13 practices, but I'm not sure that that's a term that  
14 has any sort of currency value within NAESB. If it  
15 did, I would probably say develop a best practices  
16 guide or best practices standards or technical  
17 standards or really almost anything that makes it  
18 clear that we're going beyond what is out there now.

19 MR. GOLDBERG: Can you reread your language  
20 there?

21 MR. BREIDENBAUGH: Just a second, I got a  
22 recommendation from Valerie, which would be: "Develop  
23 Technical Standards which represent industry best  
24 practices for the Measurement and Verification of  
25 Demand and Response Programs in RSO/ITO footprint

1 areas." Thank you, Valerie.

2 MR. GOLDBERG: You want to amend that to B?

3 MR. BREIDENBAUGH: No, I would make it a new  
4 4B, and everything else would just get notched up by  
5 one letter, you can tack it on.

6 MS. MCQUADE: I like where you put it  
7 because it makes sense.

8 MS. YORK: So, it would become 4B and  
9 everything else drops.

10 MS. MCQUADE: So, it's: "Develop Technical  
11 Standards for the M&V for measurement and verification  
12 of -- Develop Technical Standards which represent  
13 industry best practices for the measurement and  
14 verification of Demand Response Programs in ISO/RTO  
15 footprint areas."

16 MR. BREIDENBAUGH: And the latter part of  
17 the ISO/RTO area footprint area is the latter  
18 discussion we had about there not being any outside of  
19 the ISO/RTO footprint.

20 MS. MCQUADE: And probably what would then  
21 happen, once the business practices are complete on  
22 the Retail side, there may be a very similar item  
23 added for the technical.

24 MR. BREIDENBAUGH: Correct.

25 MS. MCQUADE: Date and assignment?

1 MR. BREIDENBAUGH: You guys know how your  
2 processes work better than I, but I would say it's  
3 likely to take about as long as the initial process  
4 did because not so much -- we spent a lot of time in  
5 initial process sort of identifying things with matrix  
6 development and all that. We're not going to spend as  
7 much time identifying things, but we're going to spend  
8 more time arguing about them. So, I think we'll  
9 probably -- you know, a year is probably not  
10 unreasonable.

11 MS. MCQUADE: So, 2010.

12 MR. GOLDBERG: But, if I may, this is Matt,  
13 given that we're drafting as we go, maybe what we want  
14 to do is have as the Annual Plan item -- you know  
15 identify -- the verb can change, but effectively  
16 identify the scope. Doing otherwise, it's a little  
17 arbitrarily for me to say, well, a year. Things I'm  
18 tripping over immediately are the reference to "best  
19 practice," by the way. You know, some demarcation of,  
20 you know, scope identification and relationship of  
21 further development of technical standards relative to  
22 what's going on in other regions of the country which  
23 meet in parts --

24 MR. WINKLER: Eric Winkler, can I get on the  
25 list?

1 MS. YORK: Before we do that, Rae had picked  
2 up the former Item 4B in the status where it says "not  
3 started" in paren "scope to be initiated in second  
4 quarter of 2009 after which a completion date will be  
5 set." So, okay, Eric, go ahead.

6 MR. WINK: Well, I didn't understand what  
7 you just said about the scope. Are you changing this,  
8 or are you saying there's another item?

9 MS. YORK: We're added a new item and the --  
10 there is a proposal on the table to add a new item and  
11 it would become 4B instead of the current 4B. The  
12 current 4B will become 4C. Insert a new item to read:  
13 "Develop technical standards which represent industry  
14 best practices for the M&V process of DR programs in  
15 ISO/RTO footprint areas." The status would be "not  
16 started" and parens "Scope to be initiated second  
17 quarter 2009 after which a completion date will be  
18 set."

19 MR. WINKLER: So, I just want to be clear  
20 because, you know, if this recommendation to add this  
21 item is coming from Aaron, I guess, I'll direct this  
22 question to him. Just so I'm clear about what you  
23 perceive to be completed with this task, are you  
24 suggesting and I'll just give just one specific and  
25 tell me if this is what you're thinking is going to

1 happen. In the current standards that are currently  
2 being balloted, we have a requirement for the  
3 telemetry interval. Are you -- are you suggesting in  
4 the technical standards that -- the technical  
5 standards that you're proposing be developed here  
6 would specify a single value or a range of values that  
7 would be enforceable across all the ISO/RTOs?

8 MR. BREIDENBAUGH: I guess first of all my  
9 issues go less to those types of technical standards,  
10 and I think we actually --

11 MR. WINKLER: Well, wait, can you just try  
12 and answer the question?

13 MR. BREIDENBAUGH: I'm trying to. I'm  
14 trying to. The focus is on M&V practices, not so much  
15 on technical practices, but technical in the sense of  
16 what timing interval and that sort of thing, but the  
17 words say: "Consistent best practices," you know what  
18 works. If the group concludes that what needs to work  
19 is a different timing interval for different areas for  
20 whatever reason, then I would say that that's the best  
21 practice.

22 What I'm getting at is more -- approaches  
23 to monitoring and verification. Like, for example,  
24 if you have -- if you're doing M&V on loads that are  
25 temperature sensitive, should you do a day ahead

1 adjustment. You know, those kinds of issues.

2 MR. WINKLER: Let me ask you this, let me  
3 ask since you're -- I don't think you understood my  
4 question. If we have a weather sensitive adjustment  
5 for baseline, are you suggesting that all the ISOs  
6 across the country would conform to a single standard?  
7 Let's say it's a temperature adjustment, you know,  
8 baseline adjustment for weather sensitive measures,  
9 are you suggesting that this technical standard would  
10 be a single standard, a numerical value or range of  
11 values that would be applicable to all ISO/RTOs?

12 MR. BREIDENBAUGH: I guess that would be up  
13 to FERC. If that's the best practice and --

14 MR. WINKLER: What you would envision the  
15 technical standard to be.

16 MR. BREIDENBAUGH: It's not necessarily one  
17 size fits all.

18 MS. MCQUADE: And we're actually debating  
19 the details rather than the merit of the line item.

20 MR. GALLAGHER: Can I get in the queue,  
21 please, here?

22 MR. WINKLER: Let me --

23 MS. YORK: Wait, wait, wait. Just a minute.  
24 If we could ask Bill to interject.

25 MR. GALLAGHER: We're having a discussion on

1 what the scope is going to be, and I think that's the  
2 purpose. Let's move on to approve the Annual Plan.  
3 You guys can talk about the scope for the whole second  
4 quarter of 2009.

5 MR. WINKLER: That's what I want to ask.

6 MR. GALLAGHER: It's not proper to do it on  
7 this call.

8 MR. WINKLER: So, is this the scope, then,  
9 that should be the title, the scope of the technical  
10 standards for M&V of DR programs for ISO/RTO  
11 footprints, not develop technical standards?

12 MS. OTONDO: Madam Chair, I was going to  
13 raise the same issues that this is an inappropriate  
14 discussion here and I would also point out if there's  
15 not agreement to what should go in the Annual Plan,  
16 the other way of doing this is to submit a request for  
17 a standard; and that's actually the normal way to have  
18 something put into the Annual Plan.

19 MR. GOLDBERG: This is Matt Goldberg. The  
20 prior remark and to Bill's remark, I don't necessarily  
21 disagree with your reservations; but as I've  
22 understood it this discussion was going to be keyed up  
23 as part of an agenda Item 9 anyway. If you think this  
24 doesn't warrant discussion, I think that is a fair  
25 observation, but I don't think you should be pointing

1 your comments at those of us who are raising questions  
2 about this.

3 MR. GALLAGHER: We're going to have to move  
4 it along, and I'm just pointing out that you were  
5 discussing the scoping and that's not appropriate in  
6 terms of what we're doing right now. We're trying to  
7 put an item into the Annual Plan.

8 MR. GOLDBERG: I understand where you're  
9 coming from, but the Executive Committee is going to  
10 be asked to make a statement about what work the  
11 Executive Committee intends to take time on and it's  
12 hard to answer that question without understanding  
13 what the scope is of what we're being asked to do. I  
14 agree with you in a sense. So, I'll let it go.

15 MR. WINKLER: In terms of timing, the notion  
16 that developing technical standards across all the  
17 ISOs in North America, technical standards, the  
18 details that are the underlying complaint from a  
19 number of folks about this current standard being too  
20 high level, will not take that same amount of time it  
21 took just to get to here. So, I want to be clear that  
22 the expectation that we're going to develop technical  
23 standards in a year and a half or two, is probably one  
24 that is rather unrealistic.

25 MR. GALLAGHER: That's why we're leaving the

1 day blank.

2 MS. MCQUADE: This is Rae. We can  
3 certain -- if we choose to add this item to the Annual  
4 Plan, which is frankly a lot easier than putting a  
5 request in, and you got enough wording around it that  
6 the EC and the subcommittee can determine what it  
7 means because if you look at the language, "Scope to  
8 be initiated in second quarter 2009." So, the group  
9 is going to be defining the scope, which will then  
10 define the completion date, because God knows we never  
11 change a completion date once you put it on the plan.  
12 So, you got the leeway to change it once it's there;  
13 and you can have the assignment to the WEQ. We've  
14 already all said that this was a first step, and that  
15 we needed to go further. We have it in the record.  
16 We have it on the transcript. We have it everywhere.

17 So, basically all B is doing is  
18 acknowledging what we've said in the meetings. You  
19 may not like the way it's worded, but you've got an  
20 entire out by saying the scope is going to be  
21 defined and the subcommittee is going to define the  
22 scope and bring it back to the EC. So, I don't know  
23 why we're having so many arguments here for  
24 something that is so simply worded.

25 MR. WATTLES: Rae, Paul Wattles, ERCOT. Can

1 you read what is the proposed language again, then,  
2 because the way Rae just said, it all makes scene.

3 MS. MCQUADE: The proposed language is:  
4 "Develop technical standards which represent industry  
5 best practices for the measurement and verification of  
6 Demand Response programs in ISO/RTO footprint areas."  
7 That wording may be giving people heartburn, but you  
8 need to read the next statement. The next statement  
9 is the status. It is not started and in parenthesis  
10 it has the same statement that we've got for energy  
11 reductions, for energy efficiency portfolio standards,  
12 for renewable portfolio standards, for my personal  
13 favorite, greenhouse gas, that says "Scope to be  
14 initiated in the second quarter after which a  
15 completion date will be set." So, even though we say  
16 it's 2-10, we can change it. We're going to be  
17 bringing a scope statement back and saying this is  
18 what we think this means. This group will have to  
19 approve it before it goes further. So, that's all it  
20 is; and it's everything we said we were going to do  
21 when we looked at the original recommendation the  
22 first time we voted on it.

23 MR. WATTLES: I'm happy, thank you.

24 MS. MCQUADE: That's why I was a little  
25 nervous about arguing about details of this.

1 MS. YORK: Syd.

2 MR. BERWAGER: This is Syd Berwager from  
3 Bonneville Power Administration; and we don't have a  
4 lot of experience, actually, using demand side to shed  
5 peak load. I thought NAESB was here to develop  
6 business practices. I guess I'm a little worried  
7 frankly about the word "best practices." I mean, at  
8 times some practices are good enough, and we can move  
9 on with other things. So, when you get to priority  
10 and you have an Annual Plan that says you're always  
11 going to strive for the best practice, I think you set  
12 yourself up for it's never good enough.

13 MS. MCQUADE: I doubt that we'll get the  
14 votes for it anyway.

15 MR. GOLDBERG: This is Matt Goldberg, and in  
16 an attempt to bring this to closure, I mean, quite  
17 frankly it should go along the lines of "Develop  
18 Technical Standard for the M&V process."

19 MS. MCQUADE: Which is what you recommended  
20 initially.

21 MS. YORK: Okay. We're going to drop out  
22 "which represent industry best practices."

23 MR. BREIDENBAUGH: Do you understand,  
24 though, that technical practices does not mean what  
25 we've done already because some people have suggested

1 that what we've done already are technical standards.  
2 I frankly don't want to have this debate again after  
3 we go to the subcommittee and somebody argues, well,  
4 we're done because we've already got technical  
5 standards and those technical standards are --

6 MS. OTONDO: We're going to get that either  
7 way, doesn't matter.

8 MR. WATTLES: This is Paul. Would you  
9 accept something like "more detailed technical  
10 standards"?

11 MR. BREIDENBAUGH: Sure, I'll take whatever  
12 I can get at this point.

13 MR. WATTLES: And what about instead of  
14 "programs" we have used the terms "products and  
15 services" throughout the standards document, can we  
16 use those terms instead of "programs"?

17 MR. BREIDENBAUGH: That's fine, too.

18 MR. WINKLER: I would take out the term  
19 "process."

20 MS. MCQUADE: So, it's: "Develop more  
21 detailed technical standards for the M&V of DR  
22 products and services in ISO/RT0 footprint areas," and  
23 I will make conforming changes everywhere we've got  
24 "programs" to say "products and services" because I  
25 notice that they're in a couple of other places that

1 need to be changed.

2 MS. REHMAN: How about decoding "M&V"?

3 MS. MCQUADE: I will, I just said it quickly  
4 to talk fast.

5 MS. YORK: Measure and verification. Ed.

6 MR. SKIBA: Just from a consistency  
7 standpoint, any of these other items that we've said  
8 that we're going to start the scoping in the second  
9 quarter, they're listed in Phase 2 as opposed to  
10 putting any date on them.

11 MS. MCQUADE: I'll make them Phase 2.

12 MS. YORK: Okay.

13 MR. BREIDENBAUGH: So, I'll move that  
14 language. I can't read it, but I'll take your word  
15 for it it's what you said.

16 MS. YORK: Any other amendments to 2009  
17 Annual Plan? Simple majority, right, anyone opposed  
18 in the room? Anyone on the phone opposed? Motion  
19 carries. Lets go. Moving on now, we've got a little  
20 bit into 9, but do we want to firm up? Are we done?

21 MR. BREIDENBAUGH: That obviates the need  
22 for 9A or any discussion around B.

23 MS. YORK: All right.

24 MS. MCQUADE: One thing, though, you want  
25 Cory to tell us where we are because we can't really

1 do -- let me reiterate where we are. We can't do what  
2 we just said is on the Annual Plan unless the  
3 recommendation that is currently out for voting  
4 actually passes. So, let's explain where we are on  
5 the votes. Please remember abstentions have -- while  
6 they're called abstentions, they have the same effect  
7 as a no vote.

8 MS. CUMMINGHAM: We currently have out of  
9 the 36 EC members who are on the EC, we have 18 in  
10 support of the recommendation, 2 opposed and 2  
11 abstained. We need 25 total votes to reach super  
12 majority and the obvious 40 percent of each subsegment  
13 except that there are three subsegments with vacancies  
14 due to recent -- three segments with vacancies and due  
15 to the recent change in the voting rules, a segment  
16 that is not fully populated doesn't get the benefit of  
17 the 40 percent segment block. So, those three  
18 segments don't have that.

19 MS. OTONDO: Which segments are those, Cory?

20 MS. CUMMINGHAM: I have to look it up real  
21 quick. They are the end user segment.

22 MS. MCQUADE: Distribution.

23 MS. CUMMINGHAM: And market/broker.

24 MS. MCQUADE: And market/broker. You have a  
25 vacancy in market/broker that needs to be filled, a

1 vacancy in distribution and a lot of vacancies in end  
2 users.

3 MS. CUMMINGHAM: If anyone has any other  
4 questions, feel free to see me.

5 MS. MCQUADE: And one comment I would make  
6 because of the visibility of this issue, I would urge  
7 those people that voted no or that have abstained to  
8 get a comment on the record for why because I will be  
9 asked and I would prefer not putting words into your  
10 mouths. So, if you could very quickly give me a  
11 little paragraph that says, "This is why I abstained,  
12 this is why I voted no. This is my company's position  
13 on why I did this."

14 Now, I've checked with Bill Boswell and  
15 Bill said and this goes for everybody, even the  
16 people that have voted yes already because the  
17 notational ballot is still open, you can reconsider  
18 your vote.

19 MR. BREIDENBAUGH: In that case, to the  
20 extent we haven't passed the Annual Plan yet.

21 MS. MCQUADE: We passed it. It's up to the  
22 Board now.

23 MR. BREIDENBAUGH: The plan was passed? I  
24 thought that was just the amendment.

25 MS. MCQUADE: No, we voted on that.

1 MR. BREIDENBAUGH: So, with that change, I  
2 would switch my vote to in favor.

3 MS. MCQUADE: And we've got it on the  
4 record. That's all I need.

5 MS. CUMMINGHAM: I already noted it on our  
6 tally. I just wanted to remind everyone that  
7 notational ballots are due February 10th. So, you  
8 still have a week to get those in.

9 MS. MCQUADE: Urge anybody else who has  
10 voted no to do the same thing and to get actively  
11 involved in Phase 2.

12 MS. CUMMINGHAM: There are still 14  
13 outstanding votes.

14 MS. MCQUADE: So, if you haven't voted,  
15 please vote; and feel free to submit comments whether  
16 you vote yes or no or abstain because those comments  
17 then go with your vote, they go to the Commission and  
18 they give me information when I get asked questions  
19 because I promise you I will.

20 MR. PRITCHARD: This is Alan Pritchard. I'd  
21 like to get in the queue, please.

22 MS. YORK: Go ahead, Alan.

23 MR. PRITCHARD: Just clarification, Rae. If  
24 I understood what you said, any vote that's in  
25 notational ballot, then members can change their vote?

1 MS. MCQUADE: I just got that word from Bill  
2 Boswell. He said that unless we've specifically noted  
3 in our bylaws or certificate, until the vote is  
4 determinative people can change their votes and it's  
5 not determinative yet. Just like the vote we took on  
6 R07020 is not determinative. So, those people that  
7 asked for notational ballot will get them but we're  
8 going to send notational ballots to every EC member  
9 and they're going to be able to change their vote if  
10 they want to.

11 MR. PRITCHARD: Just wanted to make sure I  
12 understood.

13 MS. MCQUADE: Yeah, makes my life a little  
14 more complicated.

15 MS. YORK: I got Roy, Ed and then you Bill.

16 MR. TRUE: Roy True, Aces Power. I guess  
17 the way that we're characterizing Phase 2 for DSM-EE  
18 I'm wondering whether or not we should look to split  
19 that group because it doesn't sound like we're going  
20 to get to the Efficiency EE part of that until a long  
21 way down the road, if we're talking about same  
22 committee doing this work. So, I'd just like to make  
23 the suggestion that we might want to look at splitting  
24 those two up.

25 MS. MCQUADE: We can do that when we do the

1 scoping and indicate that, you know, when we've looked  
2 at all these and scoped in Phase 2, this one is  
3 getting priority, we're focusing on this, we're going  
4 to get it done, these that we called Phase 2 are now  
5 moving to Phase 3.

6 MR. TRUE: I think that it be appropriate if  
7 you want to do it at that time. I'm just thinking the  
8 ISO -- we limited the discussions to the ISO  
9 footprint. We're talking about how you handle energy  
10 efficiency within ISO footprints, or are you talking  
11 about retail as well? I believe it encompasses all of  
12 that. I'm just concerned that with the way the  
13 discussion is going just for us to work on the  
14 additional technical specs, that we're not going to  
15 get the back half of this group, the EE part until  
16 much further down the road and so we may want to look  
17 at splitting out developing a scope.

18 MR. GOLDBERG: Matt Goldberg. I have  
19 another question: Where are the other nonISO/RTOS on  
20 developing? EE is a nationwide issue.

21 MS. MCQUADE: The Retail folks are busily  
22 developing the business practices to mirror the  
23 business practices that support the ISO/RT0 footprint  
24 area. So, that's where the Retail folks are right  
25 now; but they've got all the similar work facing them.

1 MS. YORK: Bill Gallagher.

2 MR. GALLAGHER: I just want to mention that  
3 Lou Ann Westerfield had sent around a copy of her  
4 notational ballot expressing the same concerns that I  
5 think we just alleviated here. Someone may want to  
6 reach out to her and let her know what happened here.

7 MS. MCQUADE: Aaron just volunteered. Thank  
8 you, Bill.

9 MS. YORK: Tent cards are down. So, we're  
10 going to move on to Item 9A, that's Order 890; and I'm  
11 going to call on Paul.

12 MR. SORENSON: No change.

13 MS. YORK: Thank you. Go ahead, Paul.

14 MR. SORENSON: The biggest thing in  
15 Order 890 is to continue on with the Network  
16 Integration Service on OASIS, but it's being pushed  
17 off to deal with Item C, at least for the next two-day  
18 meeting. Hopefully to put that to bed, but -- and we  
19 have no plans other than future work to be determined.  
20 I think network service will take us easily into  
21 summer.

22 MS. YORK: So, the next two days you're  
23 meeting predominantly for rollover rights?

24 MR. SORENSON: Assuming, yes, you sent it  
25 back to us, which we fully expect.

# Standards Review Subcommittee Update

October 27, 2009

# Recent Activities

- Meetings:
  - September 15, 2009
  - October 13, 2009
- Ongoing Activities
  - Monthly Review of NERC Activities
  - Review of Recommendations Posted for formal comments
    - Electronic-Tagging Functional Specification Version 1.8.1
    - Coordinate Interchange WEQ-004 Changes
    - Gas/Electric Communication WEQ-011
- Provided feedback to NERC on Reliability Standards Development Plan 2009 -2012
  - Identified one new project which needs to be monitored to determine if coordination is needed (Project 2010-04 Demand Data).
  - Provided updates to a number of projects previously identified that could require coordination.

# Upcoming Activities

- Meetings:
  - November 3, 2009
  - December 15, 2009
- Ongoing Activities
  - Monthly Review of NERC Activities
  - Review of Recommendations Posted for formal comments

# Questions/Feedback

- SRS requests others also to look at the NERC activities to assess whether they think NAESB should be developing complementary standards
- SRS seeks continued participation in monthly conference call meetings



# North American Energy Standards Board

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## NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
<b>1 Develop business practices standards as needed to complement reliability standards</b>		
Develop business practice standards to support and complement NERC reliability standards, NERC policies and NERC standards authorization requests (SARs) using the NERC/NAESB Coordination Joint Standards Development Process as appropriate. Current NAESB activities underway to develop business practice standards that are supportive of this annual plan item are:		
a) Develop business practices to support Coordinate Interchange – <a href="#">R05020</a> “Include a guideline for rounding schedules with partial MWh's in the coordinate interchange business practice WEQ BPS-002-000” the rounding standard recommendation  Status: Completed. Recommendation was voted out of the JESS on September 2, 2009. Formal comment period closed on October 8, 2009.	3 <sup>rd</sup> Q, 2009	JESS
b) Continuous support of TLR Procedure in alignment with NERC efforts on TLR Phase II and Phase III development.		
i) Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection.  Note: Activity is dependent on NERC approval of SAR expected in 2 <sup>nd</sup> Q, 2009. Upon approval of the SAR and NAESB action on this item, consideration should be given to provisional item 4.  Status: Started	2010	BPS
ii) Update WEQ-008 Appendix D to include the Market Flow Threshold Percentage recommended by NERC working group/task force  Status: Completed. The WEQ BPS voted a minor correction out of subcommittee on August 12, 2009	3 <sup>rd</sup> Q, 2009	BPS
c) Conduct analysis as to whether standards can be developed which outline a standardized process for the coordination and execution of emergency energy schedules. These would be complementary standards to EOP-002-2 Requirements R4 and R6 ( <a href="#">SRS Analysis of EOP-002-2 R4 &amp; R6</a> )  Status: Completed and as a result item (3)(a)(viii) has been added to the plan	1 <sup>st</sup> Q, 2009	JESS
d) Time Error and Inadvertent (BAL-004 and BAL-006) Coordination with NERC  Status: Monitor. (Upon initiation of this item by NAESB, a completion date will be determined. Based on discussions with NERC staff regarding the Balancing Authority Controls Standards Drafting Team’s timeline the completion date has been changed to tbd.)	TBD	TIMTF
e) DCS and AGC (BAL-002 and BAL-005) Coordination with NERC  Status Monitor. (Upon initiation of this item by NAESB, a completion date will be determined. Based on discussions with NERC staff regarding the Balancing Authority Controls Standards Drafting Team’s timeline the completion date has been changed to tbd.)	TBD	TIMTF



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Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
<b>2 Develop business practice standards in support of the FERC RM05-25-000 and RM05-17-000 (OATT Reform)</b>		
a) Develop version 2 business practice standards to better coordinate the use of the transmission system among neighboring transmission providers. Such business practice standards would be based on recommendations from NERC's Long Term ATC/AFC Task Force and would involve revised procedures for the ATC calculation and/or revised protocols as determined by the final order.		
Status: Underway		
Development is using joint standards development process with NERC. Request R050004 was expanded to include the Order No. 890 ( <a href="#">Docket Nos. RM05-25-000 and RM05-17-000</a> ) and Order No. 890-A ( <a href="#">Docket Nos. RM05-17-001, 002 and RM05-25-001, 002</a> ), "Preventing Undue Discrimination and Preference in Transmission Services," issued April 11, 2007).		
i) Group 3: Network Service On OASIS		
1. Use of OASIS to Make Electronic Requests to Designate and Terminate Network Resource	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
2. Ability to Query Requests to Designate and Terminate Network Resources and Allow for Queries of All Information Provided with Designation Requests	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
3. Masking of Designated Network Resource Operating Restrictions and Generating Cost Information	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
4. Procedural Requirements for Submitting Designations over new OASIS Functionality	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
5. Specify How Designated Network Service Informational Postings are Posted on OASIS	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
6. Develop standards for the treatment of OASIS Requests when the Customer Fails to Provide the Necessary Attestation	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
7. Procedural Requirements for Submitting Both Temporary and Indefinite Terminations of Network Resources	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		
8. Procedures for Submitting and Processing Requests for Concomitant Evaluations of Transmission Requests and Temporary Terminations	4 <sup>th</sup> Q, 2009	OASIS
Status: Underway		



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	Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
ii)	Group 4: Pre-Emption; Request No. R05019; and Revisions to Standard 9.7		
	1. Pre-Emption Status: Not Started	3rd Q, 2010	OASIS
	2. Request No. R05019 Status: Not Started	3rd Q, 2010	OASIS
	3. Modify WEQ-001-9.7 Rollover Rights for Redirect on a Firm Basis Status: Completed	2 <sup>nd</sup> Q, 2009	OASIS
iii)	Group 5: Paragraph 1377 – Group 5 work should precede group 4 work		
	1. Paragraph 1377 Status: Not Started	2nd Q, 2010	OASIS
	2. Re-Bid Of Partial Service across Multiple Transmission Providers' Systems Status: Not Started	2nd Q, 2010	OASIS
	3. Group DNR requests from a system with point-to-point requests on other systems for synchronization Status: Not Started	2nd Q, 2010	OASIS
iv)	Group 6: Miscellaneous (Paragraphs 1390 and 1627 of Order 890)		
	1. Paragraph 1390 of Order 890 Status: Not Started	4 <sup>th</sup> Q, 2010	OASIS
	2. Paragraphs 1627 of Order 890 Status: Not Started	4 <sup>th</sup> Q, 2010	OASIS
	3. Redispatch Cost Posting to allow for posting of third party offers of planning redispatch services. Status: Not Started	4 <sup>th</sup> Q, 2010	OASIS
b)	Develop the needed business practices as companion to the NERC standards for ATC related efforts		
	i) Develop standards to support existing Request No. <a href="#">R05004</a> .		



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NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
<p>1. The processing of transmission service requests, which use TTC/ATC/AFC, in coordination with NERC changes to MOD 001 where the allocation of flowgate capability based on historical Network Native Load impacts the evaluation of transmission service requests, requiring the posting of those allocation values in conjunction with queries of service offerings on OASIS</p> <p>Status: Underway</p>	4 <sup>th</sup> Q, 2009	OASIS
<p><b>3 Develop business practices standards to improve the current operation of the wholesale electric market and develop and maintain business practice and communication standards for OASIS and Electronic Scheduling</b></p>		
<p>a) Develop and/or maintain business practice standards as needed for OASIS and electronic scheduling. Specific items to address include:</p>		
<p>i) Network Services: Determine and develop needed business practice standards or other support is needed to support use of OASIS for Network Service transactions (<a href="#">R04006E</a>). (Related to AP 2(a)(iii))</p> <p>Status: Underway</p>	4 <sup>th</sup> Q, 2009	OASIS
<p>ii) Registry (TSIN): Determine and develop needed business practice standards to support the registry functions currently supported by NERC (<a href="#">R04037</a>, <a href="#">R06027</a>).</p>		
<p>1) Work with the NAESB counsel to develop a confidentiality agreement, (<a href="#">R07013</a>)</p> <p>Status: Underway – 20090716 needs cover letter for informal comment posting – move completion to 4Q 2009</p>	4 <sup>th</sup> Q, 2009	JESS
<p>2) Transition the TSIN Registry from NERC to NAESB as the enhanced Electric Industry Registry (EIR), (<a href="#">R06027</a>).</p> <p>Status: Underway</p>	1 <sup>st</sup> Q, 2010	NAESB/NERC Administration, JESS
<p>iii) Document procedures used to implement the displacement/interruption terms of the Pro Forma tariff (<a href="#">R05019</a>).</p> <p>Status: Deleted as a duplicate of 2009 AP item 2.a.ii.2</p>	4 <sup>th</sup> Q, 2009	OASIS
<p>iv) Make remaining incremental enhancements to OASIS as an outgrowth of the NAESB March 29, 2005 conference on the future of OASIS (<a href="#">R05026</a>).</p> <p>Scoping <a href="#">statement</a> completed by SRS and assignments made to BPS and OASIS.</p>		
<p>1) Eliminate Masking of TSR tag source and sink when requested status is denied, withdrawn refused, displaced, invalid, declined, annulled or retracted</p> <p>Status: Not Started</p>	4 <sup>th</sup> Q, 2009	OASIS



## North American Energy Standards Board

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### NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

	Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
2)	Initiate standard that eliminates the disparity of posting “sensitive” information. This standard should also include procedures of user certification that allows access to this class of information.  Status: Underway (upon further development of this item by NAESB, a completion date will be determined)	2010	OASIS
3)	Enhance the TSR result postings to allow showing of (i) limiting transmission elements and (ii) available generation dispatch options that would allow acceptance of reservation request.  Status: Not Started (upon initiation of this item by NAESB, a completion date will be determined)	2010	OASIS
v)	Develop, coordinate interoperability testing, and implement e-Tag version 1.8.1  Status: Underway – 20090716 discussed rough time frames laid out needs test plans drafted	4 <sup>th</sup> Q, 2009	JESS
vi)	Transition e-Tag Specification and schema to NAESB  Status: Complete. Version 1.8.1 will be identified as the NAESB Electronic Tagging Functional Specification	1 <sup>st</sup> Q, 2009	JESS
vii)	Review and correct the WEQ-004 Coordinate interchange Business Practice Standard as noted during the development of the e-Tag 1.8 development process.  Status: Completed. Recommendation was voted out of the JESS on September 2, 2009. Formal comment period closed on October 8, 2009.	3 <sup>rd</sup> Q, 2009	JESS
viii)	Review and correct WEQ-004 Coordinate Interchange Business Practice Standard as needed based on activities in NERC Project 2008-12, Coordinate Interchange Standards Revisions and supporting EOP-002-2 R4 and R6. [note: this is a new item]  Status: Not started – dependent on NERC activity (upon initiation of this item by NAESB, a completion date will be determined)	2010	JESS
b)	Develop and/or maintain standard communication protocols and cyber-security business practices as needed.		
i)	Develop PKI certification program for e-Tag and OASIS  Status: Not Started (upon initiation of this item by NAESB, a completion date will be determined)	4 <sup>th</sup> Q, 2009	Board Certification Program Committee
ii)	Develop PKI standards for OASIS.  Status: Not Started (upon initiation of this item by NAESB, a completion date will be determined)	2009	OASIS



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### NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

	Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
iii)	Develop Industry Implementation Plan for meeting PKI Standard requirements for e-tagging.  Status: Underway. Full e-Tag implementation (server & client side) is linked to the transition of the Registry from NERC to NAESB and NAESB implementation. 20090716 – server-side certificate underway – change TSIN to accept https URLs with a September 2009 target.	TBD – dependent on item above (i) and EIR	JESS
c)	Develop needed business practice standards for organization/company codes for NAESB standards – and address current issues on the use of DUNs numbers.  Status: Underway (upon further development of this item by NAESB, a completion date will be determined)  Common code usage is linked to the transition of the Registry from NERC to NAESB	2009	NAESB Staff with WEQ support
d)	Develop business practice standards in support of FERC Order No. 717  Status: Completed	1 <sup>st</sup> Q, 2009	BPS
<b>4</b>	<b>Review and develop business practices standards to Demand Response, Demand Side Management and Energy Efficiency Programs</b>  Review and develop needed model business practices for a standardized method for quantifying benefits, savings, cost avoidance and/or the reduction in energy demand and usage derived from the implementation of demand side management and energy efficiency programs. This effort will include demand side response, energy efficiency programs and metering, including the 'curtailment service provider' program.		
a)	Develop matrix and business practice standards for measurement and verification for demand response products and services in ISO/RTO footprint areas.  Status: Completed	4 <sup>th</sup> Q, 2008	WEQ Section of the Joint WEQ/REQ DSM-EE Subcommittee
b)	Develop more detailed technical standards for the measurement and verification of demand response products and services in ISO-RTO footprint areas, including examples to be developed to support item 4(a) above.  Status: In Progress	Phase 2	WEQ Section of the Joint WEQ/REQ DSM-EE Subcommittee
c)	Develop preamble for business practice standards for measurement and verification for demand response and energy efficiency programs.  Status: Underway	3 <sup>rd</sup> Q, 2009	Joint WEQ/REQ DSM-EE Subcommittee
d)	Develop glossary for business practice standards  Status: Underway	3 <sup>rd</sup> Q, 2009	Joint WEQ/REQ DSM-EE Subcommittee



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### NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
e) Support retail development of matrix and model business practice standards for measurement and verification for demand response programs  Status: Underway	3 <sup>rd</sup> Q, 2009	Retail Section of Joint WEQ/REQ DSM-EE Subcommittee
f) Develop business practice standards to measure and verify energy reductions that are made to comply with a Renewable Portfolio Standard that included energy efficiency or a stand-alone Energy Efficiency Portfolio Standard.  Status: Upon further review, the task force has determined this work will be completed under Annual Plan Item 4g.	Combined with 4g	WEQ Section/Joint WEQ/REQ DSM-EE Subcommittee
g) Develop business practice standards used to measure and verify reductions in energy and demand from energy efficiency in wholesale and retail markets. <sup>1</sup>  <b>Status:</b> Underway (An estimated completion date will be established in 4 <sup>th</sup> Q after the new subcommittee has been formalized)	Phase 2	WEQ Section/Joint WEQ/REQ DSM-EE Subcommittee
h) Develop business practice standards for cap and trade programs for green house gas  Status: Moved to Provisional Item 8. This item will not be addressed until Congress has addressed pending legislation.	Moved to Provision Item 8	Joint WEQ/REQ DSM-EE Subcommittee

#### 5 Maintain existing body of Version 2 standards

- |   |                         |                      |
|---|-------------------------|----------------------|
| a) Make consistency changes to Version 1.0 standards as directed by the WEQ Leadership Committee on December 12, 2007 (R08001 – BPS, OASIS, R08002 - OASIS, R08003 - OASIS - BPS, R08004, R08005 - OASIS)       |                         |                      |
| 1) OASIS Consistency Changes (R08001, R08002, R08003, R08005)<br><br>Status: Not Started (upon initiation of this item by NAESB, a completion date will be determined)  | 2009                    | OASIS                |
| 2) Gas / Electric Communication Consistency Changes (R08004)<br><br>Status: Completed. WEQ BPS coordinated recommendation with WGQ BPS. WEQ BPS voted recommendation out of subcommittee on September 28, 2009. | 3 <sup>rd</sup> Q, 2009 | WEQ BPS /<br>WGQ BPS |

<sup>1</sup> Energy efficiency may be a wholesale product, such as capacity. Energy efficiency in retail markets may be from individual energy efficiency measures at the project level or a portfolio of projects that make up an energy efficiency program.



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### NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as Approved by the Board on September 24, 2009 and revised on October 9, 2009

	Item Description	Completion <sup>1</sup>	Assignment <sup>2, 3</sup>
b)	<p>Modify NAESB definitions to address internal inconsistencies and inconsistencies with the NERC glossary. Revise existing NAESB glossary/definition of terms to be applicable to entire set of WEQ Business Practices. (<a href="http://www.naesb.org/pdf3/weq_ec051308w3.doc">http://www.naesb.org/pdf3/weq_ec051308w3.doc</a>)</p> <p>Status: Underway</p> <p>Subcommittee co-chairs are developing WEQ-000 Definition of Terms/Acronyms to replace definitions being included in each NAESB Business Practice.</p>	4 <sup>th</sup> Q, 2009	BPS/OASIS/RS/JESS Co-chairs
c)	<p>Develop standards to allow for registered Market Operators to request changes to the Market Level profile of Implemented Interchange (<a href="#">R06006</a>)</p> <p>Status: Complete</p>	1 <sup>st</sup> Q, 2009	JESS
d)	<p>Consistent with ¶51 of FERC Order No. 890-A, add AFC and TFC values to the "System_Attribute" data element of the NAESB Standard WEQ-003: OASIS S&amp;CP Data Dictionaries. (<a href="#">R08011</a>)</p> <p>Status: Not Started</p> <p>This Standards Request was assigned to the OASIS in May 2008.</p>	3 <sup>rd</sup> Q, 2009	OASIS
e)	<p>Provide for Enhanced Granularity for Public Utilities in Identifying Critical Operational Flow Orders. (<a href="#">R08020</a>)</p> <p>Status: WEQ Complete/WGQ In Progress. This Standards Request was assigned to the BPS in August 2008 (upon initiation of this item by NAESB, a completion date will be determined)</p>	2 <sup>nd</sup> Q, 2009	BPS jointly with WGQ BPS
f)	<p>Synchronize Bidding Credit Requirements for FTR, TCC and CRR (<a href="#">R08025</a>)</p> <p>Posting of collateral is an important issue for financial marketers. Most financial marketers and smaller entities are required to post cash for FTR transactions, while most utilities post unsecured credit. Therefore, the timing for posting collateral is especially crucial to financial marketers. There are two posting periods for FTRs:</p> <ol style="list-style-type: none"> <li>1. The Bidding Requirement: Credit must be posted with FTR bids and these monies are held until bids are cleared.</li> <li>2. The Holding Requirement: After bids are cleared and FTRs awarded, collateral is required for the amount of time the FTR is active.</li> </ol> <p>Status: Withdrawn by requester</p>	4 <sup>th</sup> Q, 2009	SRS (Scoping)
g)	<p>Correct WEQ 013-2.6.7.2. – Resale off OASIS (<a href="#">R08027</a>)</p>	TBD	OASIS
h)	<p>Add language to WEQ-001-4 Online Negotiation and Confirmation process to clarify Table 4-3 (<a href="#">R09003</a>)</p>	TBD	OASIS
i)	<p>Change Power Plant Operator to Power Plant Gas Coordinator (<a href="#">R09011</a>)</p> <p>Status: Completed. WEQ BPS coordinated recommendation with WGQ BPS. WEQ BPS voted recommendation out of subcommittee on September 28, 2009.</p>	4 <sup>th</sup> Q, 2009	WEQ BPS/WGQ BPS



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### NORTH AMERICAN ENERGY STANDARDS BOARD

NAESB 2009 WEQ Annual Plan as approved by the Board on September 24, 2009  
With Revisions Made on October 9, 2009

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#### PROVISIONAL ITEMS

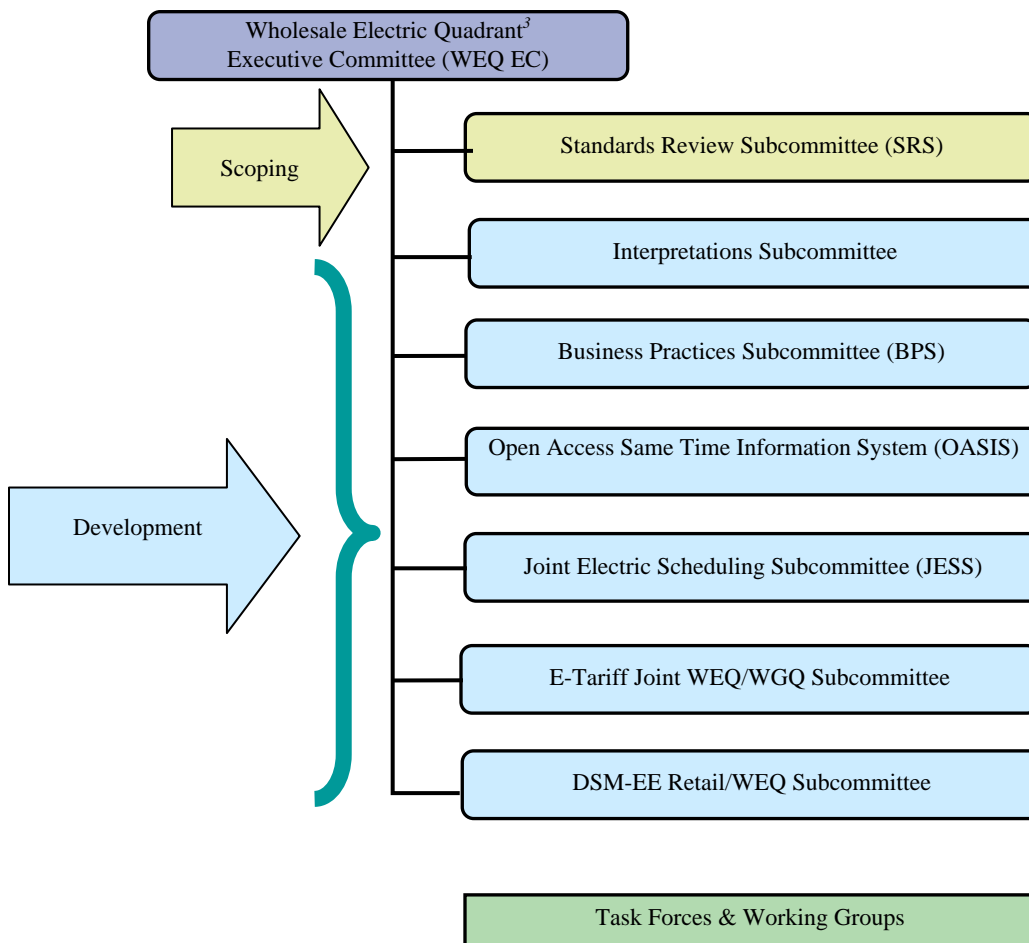
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- 1 Develop and or modify business practices related to support of NERC effort on the NERC Resources and Transmission Adequacy (Project 2009-05 Resource Adequacy Assessment).
- 2 Develop business practices for allocating capacity among requests received during a submittal window Order 890-A ([Docket Nos. RM05-17-001, 002 and RM05-25-001, 002](#) - Paragraph 805).
- 3 Determine any needed NAESB action in support of the Interchange Distribution Calculator (IDC) and develop any necessary standards.
- 4 Prepare recommendations for future path for TLR (equity concerns) in concert with NERC, which may include alternative congestion management procedures<sup>4</sup>. Work on this activity is dependent on completing 2009 WEQ Annual Plan 1.c.i (Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection).
- 5 Develop complementary standards that align with NERC Project 2008-01 Voltage and Reactive Control, for which a white paper is expected after the 2009 SAR is processed.
- 6 Develop NAESB business practices as needed to complement NERC reliability standards for FAC-012 and FAC-013.
- 7 Determine NAESB action needed to support FERC Action Plan for Smart Grid Technology.
- 8 Develop business practice standards for cap and trade programs for green house gas (See action item 4h).
- 9 Conduct assessment to determine if Electric Industry Requirements documented in WEQ-011 Gas / Electric Coordination should be considered reliability requirements and transition to NERC.



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### NAESB WEQ EC and Subcommittee Leadership:

Executive Committee: Kathy York (WEQ EC Chair) and Matthew Goldberg (WEQ EC Vice Chair)

Standards Review Subcommittee: Narinder Saini, Ed Skiba

Interpretations Subcommittee: Robert Schwermann

Business Practices Subcommittee & Task Forces: Jim Busbin (TLR), Ed Skiba

Open Access Same Time Information System (OASIS): Paul Sorenson, J.T. Wood, Marcie Otondo

Joint Electric Scheduling Subcommittee (JESS): Bob Harshbarger (NAESB), Jim Hansen (NERC)

e-Tariff Joint WEQ/WGQ Subcommittee (e-Tariff): Jane Daly (WEQ), Keith Sappenfield (WGQ)

DSM-EE Joint Retail/WEQ Subcommittee: Ruth Kiselewich and David Koogler (Retail), Roy True and Paul Wattles (WEQ)



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### End Notes WEQ 2009 Annual Plan:

<sup>1</sup> Dates in the completion column are by end of the quarter for completion by the assigned committee. The dates do not necessarily mean that the standards are fully staffed to be implementable by the industry, and/or ratified by membership. If one item is completed earlier than planned, another item can begin earlier and possibly complete earlier than planned. There are no begin dates on the plan.

<sup>2</sup> The assignments are abbreviated. The abbreviations and committee structure can be found at the end of the annual plan document.

<sup>3</sup> The Electronic Scheduling Subcommittee and Information Technology Subcommittee (ESS/ITS) were merged together through a decision made at the May 12, 2009 WEQ EC meeting. The new subcommittee is named Open Access Same Time Information System Subcommittee (OASIS) and is now shown for assignments in this and future annual plans as OASIS. Similarly the Joint Interchange Scheduling Working Group (JISWG) was renamed the Joint Electric Scheduling Subcommittee and now reports to the WEQ EC. JESS is now shown for assignments in this and future annual plans rather than JISWG. The changes took effect on August 1, 2009.

<sup>4</sup> For additional information, please see comments submitted by PJM and MISO for this Annual Plan Item:  
[http://www.naesb.org/pdf3/weq\\_aplan102907w1.pdf](http://www.naesb.org/pdf3/weq_aplan102907w1.pdf).



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October 19, 2009

**TO:** NAESB Members and Interested Industry Participants  
**FROM:** Rae McQuade  
**RE:** Preparation of the 2010 Annual Plans: Meeting Announcement, Agendas and Call for Comments

Dear NAESB Members and Interested Parties,

For the development of annual plans for 2010, we are asking for your input. The annual plan defines the types of standards development activities that will be undertaken in 2010 and once drafted, will be forwarded to the NAESB Board of Directors, who is responsible for approving the plan and making any needed modifications to the plan to support the organization's strategies and focus. For background as you consider the items that should be on the plan, we have provided the current year's plans, which may include carryover items. The annual plans conference calls are scheduled for:

Date	Time	Meeting Topic, Call-in and Web Cast Information, Meeting Materials and Comments Deadline
Friday, Nov 6	2-4 pm C	Retail Quadrants 2010 Annual Plan Conference Call Number: 866-740-1260 Access Code: 3560060 Security Code: 2843 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes) Comment Deadline: Nov 4, 2009, submit comments to <a href="mailto:naesb@naesb.org">naesb@naesb.org</a> Meeting materials: <a href="#">2009 Retail Annual Plan</a> Meeting presided over by Ruth Kiselewich and Mike Novak
Monday, Nov 9	9-11 am C	Wholesale Electric Quadrant 2010 Annual Plan Conference Call Number: 866-740-1260 Access Code: 3560060 Security Code: 6862 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes) Comment Deadline: Nov 5, 2009, submit comments to <a href="mailto:naesb@naesb.org">naesb@naesb.org</a> Meeting materials: <a href="#">2009 WEQ Annual Plan</a> Meeting presided over by Kathy York
Monday, Nov 9	2-4 pm C	Wholesale Gas Quadrant 2010 Annual Plan Conference Call Number: 866-740-1260 Access Code: 3560060 Security Code: 4698 Web Cast: <a href="http://www.readytalk.com">http://www.readytalk.com</a> (please use same codes) Comment Deadline: Nov 5, 2009, submit comments to <a href="mailto:naesb@naesb.org">naesb@naesb.org</a> Meeting materials: <a href="#">2009 WGQ Annual Plan</a> Meeting presided over by Jim Buccigross

If you determine if you would like to provide input to this critical process, we would ask that you provide specific information that is listed below. **If we could have your comments for the specific quadrant annual plans as noted with the call in information**, we would appreciate it. Your comments should be forwarded to the NAESB office ([naesb@naesb.org](mailto:naesb@naesb.org)). All



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comments will be welcome and you should feel free to share this request for comments with your colleagues regardless of their status as NAESB members. All comments will be posted on the NAESB web site.

When you forward comments, we would appreciate the following information:

- Your contact information, so that follow up questions can be asked, if needed.
- For identification of new annual plan items for 2010:
  - Identification of new annual plan items including a description, with a designation of whether the items are to be considered for completion in 2010 or beyond.
  - A level of priority for the new annual plan items and how fast the development should occur, including an estimate of how much time the development time will be needed.
  - Whether you, your staff or colleagues are interested in participating and if you consider yourself a subject matter expert on the new annual plan items.
- Any other comments you would like to provide.

We look forward to hearing from you soon. Should you have any questions or need additional information, do not hesitate to contact the NAESB office at 713-356-0060 or [vthomason@naesb.org](mailto:vthomason@naesb.org).

Best Regards,

*Rae*

Rae McQuade  
President, NAESB



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### *Notes for participation:*

1. Please note that if the conference leader has not yet initiated the conference call, you will be placed on music hold until the conference leader starts the conference.
2. Please keep your phone on mute (***not hold***) unless you are speaking. If you do not have a mute button on your phone, press \*6 to mute the call and \*7 to unmute the call. The other participants will appreciate this courtesy, as it will improve the ability of all to hear.
3. When speaking, please announce yourself and your company.
4. If you have problems joining a conference or need technical assistance please contact ReadyTalk Customer Care at 1-800-843-9166.
5. If you have any questions pertaining to the meeting or its materials, please call the NAESB office at 713-356-0060.

### *Draft Agendas:*

1. Administrative: Antitrust Guidance, Roll Call, Adoption of Agenda
2. Review and Discussion of Each Comment and Possible Changes to the 2010 Plan
3. Vote to forward the plan to the relevant Executive committee for its review and approval and determination if the vote can be held notational or a call is required
4. Other Business
5. Adjourn



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**NORTH AMERICAN ENERGY STANDARDS BOARD**  
**2009 WGQ Annual Plan as Approved by the Board on September 24, 2009**

Item Description	Completion <sup>i</sup>	Assignment <sup>ii</sup>
<b>1. Damage Reporting for Natural Gas Pipeline Facilities</b>		
Review and develop standards as appropriate to support posting of information as noted in Docket No. RM06-18-000, <a href="#">Order No. 682</a> and Docket No. RM06-18-001, <a href="#">Order No. 682-A</a> . Review transmission line damage reporting to identify commonality and apply as appropriate. Status: Complete	2 <sup>nd</sup> Q, 2009	Interpretations
<b>2. Contracts Activities</b>		
a. Update ISDA Gas Annex to correspond to the updated NAESB Base Contract for Sale and Purchase of Sale of Natural Gas, dated September 5, 2006. Status: Underway	3 <sup>rd</sup> Q, 2009	Contracts
b. Revise the Trading Partner Agreement TPA by removing the Exhibits from the agreement and relegate such information as contained in the Exhibits to operational worksheet(s), ( <a href="#">R08015</a> ). Status: Complete	2 <sup>nd</sup> Q, 2009	Joint Retail BPS/WGQ Contracts
<b>3. Gas-Electric Interdependency</b>		
Respond to directives of <a href="#">FERC Order No. 698 issued 6-25-07</a> , Docket Nos. <a href="#">RM05-5-001</a> and <a href="#">RM96-1-027</a> as related to the NAESB reports submitted in Docket No. <a href="#">RM05-28-000</a> :		
a. ¶ 56 of Order No. 698: "... Under the Commission regulations, the releasing shipper is responsible for clearly setting out the terms and conditions of the release and that would include the means for implementing the formula rate. <u>This is also an issue on which NAESB can develop standards to ensure that such releases can be processed quickly and efficiently.</u> " (emphasis added)		
i.) Prepare fully staffed recommendation Status: Complete	2 <sup>nd</sup> Q, 2009	BPS, IR/Technical
b. Provide for Enhanced Granularity for Public Utilities in Identifying Critical Operational Flow Orders. ( <a href="#">R08020</a> ) Status: Underway	4 <sup>th</sup> Q, 2009	BPS, IR/Tech jointly with WEQ BPS
<b>4. Promotion of a More Efficient Capacity Release Market</b>		
Review FERC Order Nos. 712 and 712A and modify NAESB standards as appropriate ( <a href="#">Docket Nos. RM08-1-000, RM08-1-001</a> ).		
a. Develop business practice standards as appropriate Status: Complete	2 <sup>nd</sup> Q, 2009	BPS/Interpretations
b. Prepare fully staffed recommendation Status: Complete	2 <sup>nd</sup> Q, 2009	BPS, Interpretations, IR and Technical



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**NORTH AMERICAN ENERGY STANDARDS BOARD**  
**2009 WGQ Annual Plan as Approved by the Board on September 24, 2009**

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Item Description	Completion <sup>i</sup>	Assignment <sup>ii</sup>
<b>5. Capacity Release EDI Review</b>		
Review capacity release transactions upload and related responses to determine suitability for EDI		
a. Conduct Technical Investigation and prepare report for BPS consideration Status: Not Started (Dependent on conclusion of Item 4)	4 <sup>th</sup> Q, 2009	IR/Technical
b. Develop Business Practice Standards as appropriate Status: Not Started (Adjustments may be made to Completion Dates based on report from Item 5.a)	4 <sup>th</sup> Q, 2009	BPS
c. Prepare fully staffed recommendation Status: Not Started (Adjustments may be made to Completion Dates based on report from Item 5.a)	1 <sup>st</sup> Q, 2010	BPS, IR/Technical
<b>6. Customer Security Administration</b>		
Review and develop standards as appropriate to support Customer Security Administration Standards ( <a href="#">Comment Submittal, 10-29-07</a> ) Status: Not started (Scoping to take place 3 <sup>rd</sup> Q, 2009 after which a Completion Date will be set)	2009	BPS
<b>7. Gas Quality Reporting</b>		
a. Respond to directives of FERC Docket No. RP07-504-000: ¶ 10 "... develop a uniform set of standards regarding the posting of rapidly changing gas quality information applicable to those pipelines which are required by their tariffs to do so." ( <a href="#">Docket No. RP07-504-000</a> ) Status: Complete	1 <sup>st</sup> Q, 2009	BPS
b. Prepare fully staffed recommendation Status: Complete	2 <sup>nd</sup> Q, 2009	IR/Technical
<b>8. Standards of Conduct</b>		
Review and develop standards, as appropriate, to support posting of standards of conduct information pursuant to <a href="#">Docket No. RM07-1-000, Order No. 717</a> Status: Complete	1 <sup>st</sup> Q, 2009	BPS
<b>9. Electronic Delivery Mechanisms</b>		
Review minimum technical characteristics in Appendices B, C, and D of the WGQ QEDM Manual, and make changes as appropriate. Status: Complete	1 <sup>st</sup> Q, 2009	EDM



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**NORTH AMERICAN ENERGY STANDARDS BOARD**  
**2009 WGQ Annual Plan as Approved by the Board on September 24, 2009**

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<b>Item Description</b>	<b>Completion<sup>i</sup></b>	<b>Assignment<sup>ii</sup></b>
<b>Program of Standards Maintenance &amp; Fully Staffed Standards Work</b>		
Business Practice Requests	Ongoing	Assigned by the EC <sup>iii</sup>
Continue review against plan for migration to ANSI ASC X12 new versions as needed and coordinate such activities with DISA.	Ongoing	ANSI X12 Subcommittee
Information Requirements and Technical Mapping of Business Practices	Ongoing	Assigned by the EC <sup>4</sup>
Interpretations for Clarifying Language Ambiguities	Ongoing	Assigned by the EC <sup>4</sup>
Maintenance of Code Values and Other Technical Matters	Ongoing	Assigned by the EC <sup>4</sup>

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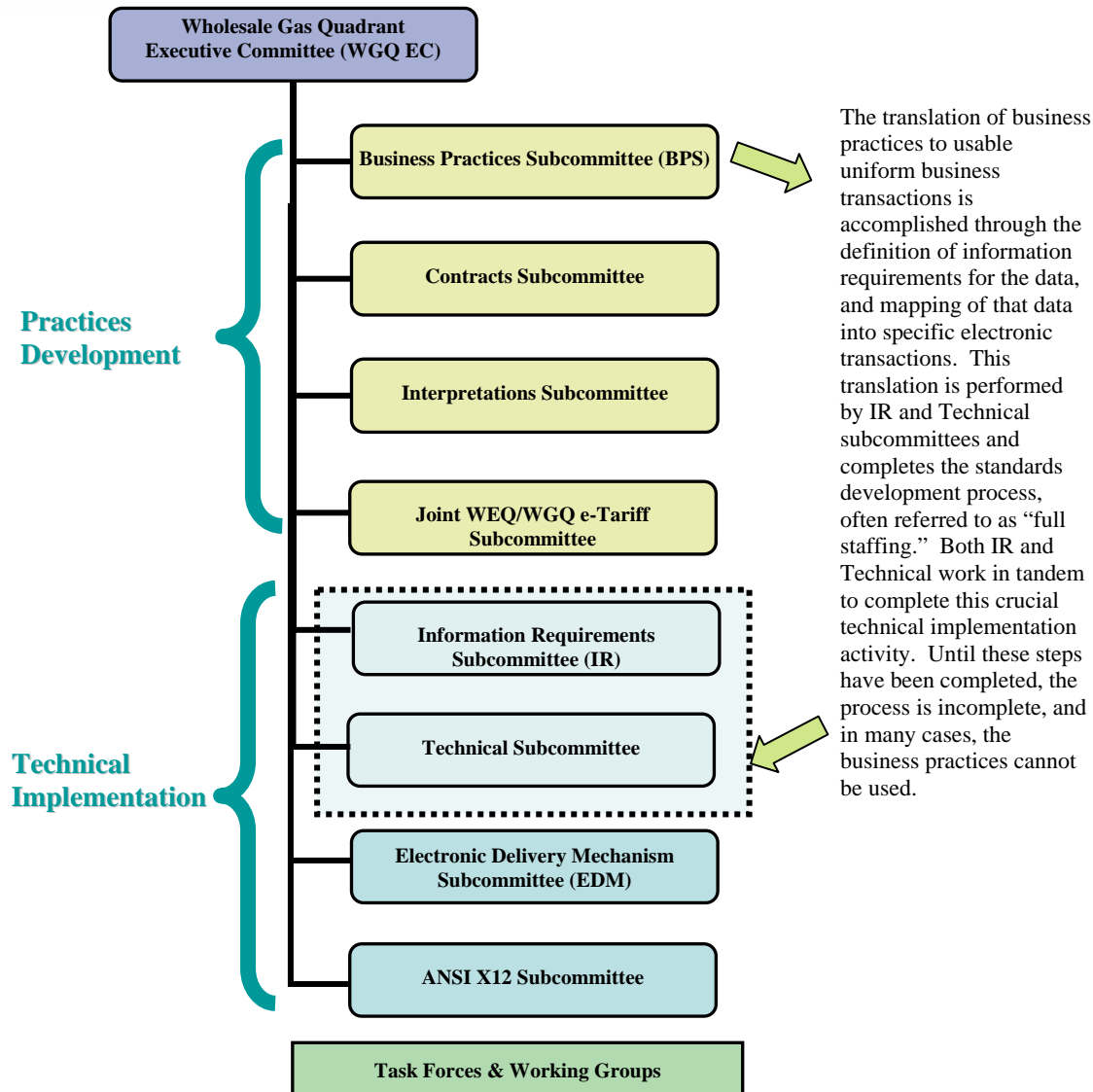
**Provisional Activities**

Respond to requests as received that are related to Docket No. [AD06-11-000](#) (Market Transparency Reporting).

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# North American Energy Standards Board

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## NAESB 2009 WGQ EC and Subcommittee Leadership:

Executive Committee: Jim Buccigross, Chair and Mike Novak, Vice-Chair  
 Business Practices Subcommittee: Kim Van Pelt, Valerie Crockett, Steve Abbey and Richard Smith  
 Information Requirements Subcommittee: Dale Davis  
 Technical Subcommittee: Mike Stender, Kim Van Pelt  
 Contracts Subcommittee: Keith Sappenfield  
 Electronic Delivery Mechanism Subcommittee: Leigh Spangler, Christopher Burden  
 Interpretations Subcommittee: Paul Love  
 Joint WEQ/WGQ e-Tariff Subcommittee: Keith Sappenfield, Jane Daly



## North American Energy Standards Board

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### End Notes WGQ 2009 Annual Plan:

<sup>i</sup> Dates in the completion column are by end of the quarter for completion by the assigned committee. The dates do not necessarily mean that the standards are fully staffed to be implementable by the industry, and/or ratified by membership. If one item is completed earlier than planned, another item can begin earlier and possibly complete earlier than planned. There are no begin dates on the plan.

<sup>ii</sup> The assignments are abbreviated. The abbreviations and committee structure can be found at the end of the annual plan document.

<sup>iii</sup> The EC assigns maintenance of existing standards on a request-by-request basis.



# North American Energy Standards Board

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**NORTH AMERICAN ENERGY STANDARDS BOARD  
2009 ANNUAL PLAN for the RETAIL GAS and ELECTRIC QUADRANTS  
Approved by the NAESB Board of Directors on September 24, 2009**

Item Number & Description <sup>i</sup>	Completion <sup>ii</sup>	Assignment <sup>iii iv</sup>
1. Electronic Retail Billing.  Develop Technical Electronic Implementation Standards and Data Dictionaries – Book 9: Customer Billing and Payment Notification via Uniform Electronic Transactions, ( <a href="#">R05016</a> and <a href="#">Attachment</a> , submitted by Wal-Mart/J.C. Penney) Status: Complete	2 <sup>nd</sup> Q, 2009	TEIS
2. Develop Technical Electronic Implementation Standards and Data Dictionaries – Book 8: Customer Information Status: Complete	2 <sup>nd</sup> Q, 2009	TEIS
3. Develop Technical Electronic Implementation Standards and Data Dictionaries – Book 10: Customer Enrollment, Drop and Account Information Change (Non Texas Model) Status: Complete	2 <sup>nd</sup> Q, 2009	TEIS
4. Customer Inquiries		
a. Develop Model Business Practices and procedures for responding to customer inquiries directed to Distributors and/or Suppliers and for notification of the other party. Status: Complete	2 <sup>nd</sup> Q, 2009	BPS
b. Develop Technical Electronic Implementation Standards to support MBPs for customer inquiries directed to Distributors and/or Suppliers and for notification of the other party. Status: Underway	3 <sup>rd</sup> Q, 2009	IR/TEIS/Texas Task Force
5. Develop NAESB Certification checklist criteria for Retail Quadrants to be used in the NAESB Certification Program. Status: Not Started. Dependent upon publication of Version 1.1 at a minimum, but more dependent upon completion of Customer Choice efforts.	4 <sup>th</sup> Q, 2009	Ad Hoc EC Certification Group
6. Review and develop needed model business practices for a standardized method for quantifying benefits, savings, cost avoidance and/or the reduction in energy demand and usage derived from the implementation of demand side management and energy efficiency programs. This effort will include demand side response, energy efficiency programs and metering, including the 'curtailment service provider' program. Status: Underway		Joint WEQ/REQ DSM Subcommittee
a. Develop matrix and business practice standards for measurement and verification for demand response products and services in ISO/RTO footprint areas. Status: Completed	4 <sup>th</sup> Q, 2008	WEQ Section of the Joint WEQ/REQ DSM Subcommittee
b. Develop more detailed technical standards for the measurement and verification of demand response products and services in ISO-RTO footprint areas. Status: Underway	Phase 2	WEQ Section of the Joint WEQ/REQ DSM Subcommittee
c. Develop preamble for business practice standards for measurement and verification for demand response and energy efficiency programs. Status: Underway	3 <sup>rd</sup> Q, 2009	Joint WEQ/REQ DSM Subcommittee



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**NORTH AMERICAN ENERGY STANDARDS BOARD  
2009 ANNUAL PLAN for the RETAIL GAS and ELECTRIC QUADRANTS  
Approved by the NAESB Board of Directors on September 24, 2009**

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<b>Item Number &amp; Description<sup>i</sup></b>	<b>Completion<sup>ii</sup></b>	<b>Assignment<sup>iii iv</sup></b>
d. Develop glossary for business practice standards Status: Underway	3 <sup>rd</sup> Q, 2009	Joint WEQ/REQ DSM Subcommittee
e. Support retail development of matrix and model business practice standards for measurement and verification for demand response programs Status: Underway	3 <sup>rd</sup> Q, 2009	Retail Section of the Joint WEQ/REQ DSM Subcommittee
f. Develop business practice standards to measure and verify energy reductions that are made to comply with a Renewable Portfolio Standard that included energy efficiency or a stand-alone Energy Efficiency Portfolio Standard. Status: Scoping Underway (Scope to be initiated in 2 <sup>nd</sup> Q, 2009, after which a completion date will be set)	Phase 2*	WEQ Section of the Joint WEQ/REQ/RGQ DSM Subcommittee
g. Develop business practice standards to factor Demand Control and Energy Efficiency programs into reliability / supply decisions at the wholesale level for generation and transmission planning and operations. Status: Scoping Underway (Scope to be initiated in 2 <sup>nd</sup> Q, 2009, after which a completion date will be set)	Phase 2*	WEQ Section of the Joint WEQ/REQ/RGQ DSM Subcommittee
h. Develop business practice standards to support cap and trade programs for green house gas. Status: Scoping Underway (Scope to be initiated in 2 <sup>nd</sup> Q, 2009 at the earliest. Upon conclusion of the scoping statement it will be determined whether NAESB standards development is appropriate)	Phase 2*	Joint WEQ/REQ/RGQ DSM Subcommittee
7. Revise the Trading Partner Agreement TPA by removing the Exhibits from the agreement and relegate such information as contained in the Exhibits to operational worksheet(s), ( <a href="#">R08015</a> ). Status: Complete	2 <sup>nd</sup> Q, 2009	Joint Retail/WGQ Contracts
8. Billing and Payments		
a. Develop Process Flows to be included as models in book 3 – billing and payments Status: Underway	3 <sup>rd</sup> Q, 2009	BPS
b. If the development of Process Flows indicate a gap in the model business practices, then develop new model business practices to address the gap. Status: Underway	3 <sup>rd</sup> Q, 2009	BPS
9. Model Business Practices User Guide Add a new section to Book 0 to describe what Books have been developed, how the Books are laid out, and revised the title of the Book to reflect the additions Status: Not Started	4 <sup>th</sup> Q, 2009	BPS
10. Additional Registration Agent Processes		
a. Review all existing Model Business Practices to determine if the Service Request process is already covered, and if necessary develop any new Model	4 <sup>th</sup> Q, 2009	BPS

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\* These items may be moved to Provisional Activities



## North American Energy Standards Board

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**NORTH AMERICAN ENERGY STANDARDS BOARD  
2009 ANNUAL PLAN for the RETAIL GAS and ELECTRIC QUADRANTS  
Approved by the NAESB Board of Directors on September 24, 2009**

Item Number & Description <sup>i</sup>	Completion <sup>ii</sup>	Assignment <sup>iii iv</sup>
Business Practices required Status: Underway		
b. Review all existing Model Business Practices to determine if the update Customer Information process is already covered, and if necessary develop any new Model Business Practices required Status: Underway	4 <sup>th</sup> Q, 2009	BPS
c. Review all existing Model Business Practices to determine if the disconnection and reconnection process is already covered, and if necessary develop any new Model Business Practices required. Status: Underway	4 <sup>th</sup> Q, 2009	BPS
d. Review all existing Model Business Practices to determine if the billing & payment process is already covered, and if necessary develop any new Model Business Practices required Status: Underway	4 <sup>th</sup> Q, 2009	BPS
11. Supplier Certification Review Book 1 – Market Participant Interactions to determine if Supplier Certification is fully covered, and if necessary develop any new Model Business Practices required with the potential of moving all related Model Business Practices to a new Book Status: Not Started	4 <sup>th</sup> Q, 2009	BPS
12. Supplier Marketing Practices Develop Model Business Practices providing for a “Consumer Disclosure Statement” to be presented to residential and small commercial customers describing the Supplier’s service offering and related contract provisions. This statement would also identify how certain Supplier-Customer interactions are conducted. Amongst the topics to be considered for inclusion on the statement would be the following: <ul style="list-style-type: none"> <li>• the most important terms of the Supplier agreement, such as the contract’s term and termination fee provisions;</li> <li>• training and identification of Supplier marketing representatives;</li> <li>• protocols for Supplier in-person and telephone contacts with customers;</li> <li>• added measures for protecting non-English speaking customers; and</li> <li>• Processes for handling customer complaints and resolving disputes arising from Supplier marketing activities.</li> </ul> Status: Not Started	4 <sup>th</sup> Q, 2009	BPS



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**NORTH AMERICAN ENERGY STANDARDS BOARD  
2009 ANNUAL PLAN for the RETAIL GAS and ELECTRIC QUADRANTS  
Approved by the NAESB Board of Directors on September 24, 2009**

Item Number & Description <sup>i</sup>	Completion <sup>ii</sup>	Assignment <sup>iii iv</sup>
<b>Program of Standards Maintenance &amp; Fully Staffed Standards Work<sup>v</sup></b>		
Business Practice Requests	Ongoing	Assigned by the EC
Information Requirements and Technical Mapping of Business Practices	Ongoing	Assigned by the EC
Ongoing Interpretations for Clarifying Language Ambiguities	Ongoing	Assigned by the EC
Ongoing Maintenance of Code Values and Other Technical Matters	Ongoing	Assigned by the EC
Ongoing Development and Maintenance of Definitions	Ongoing	Glossary

### Provisional Activities

#### Joint Effort:

Supplier Certification: Develop practices for Distribution Companies to register/certify new Suppliers when they seek to begin doing business in the Distribution Company's service area.

Modify TPA as necessary.

Review security standards as may be deemed necessary, such as Public Key Infrastructure (PKI).

Review existing body of model business practices for consistency and develop or modify model business practices as needed.

#### Retail Electric Quadrant Effort Only:

Retail Meter Data Validation, Editing & Estimating: Develop procedures for insuring the integrity and validity of retail customer metering data that is needed by utilities and suppliers for billing, etc. Issues related to unbundled or competitive metering are not to be considered.

Settlement Process: Reconcile energy schedules and energy delivered by suppliers within a given market. Note: will need to be coordinated with the WEQ for the REQ.

#### Retail Gas Quadrant Effort Only:

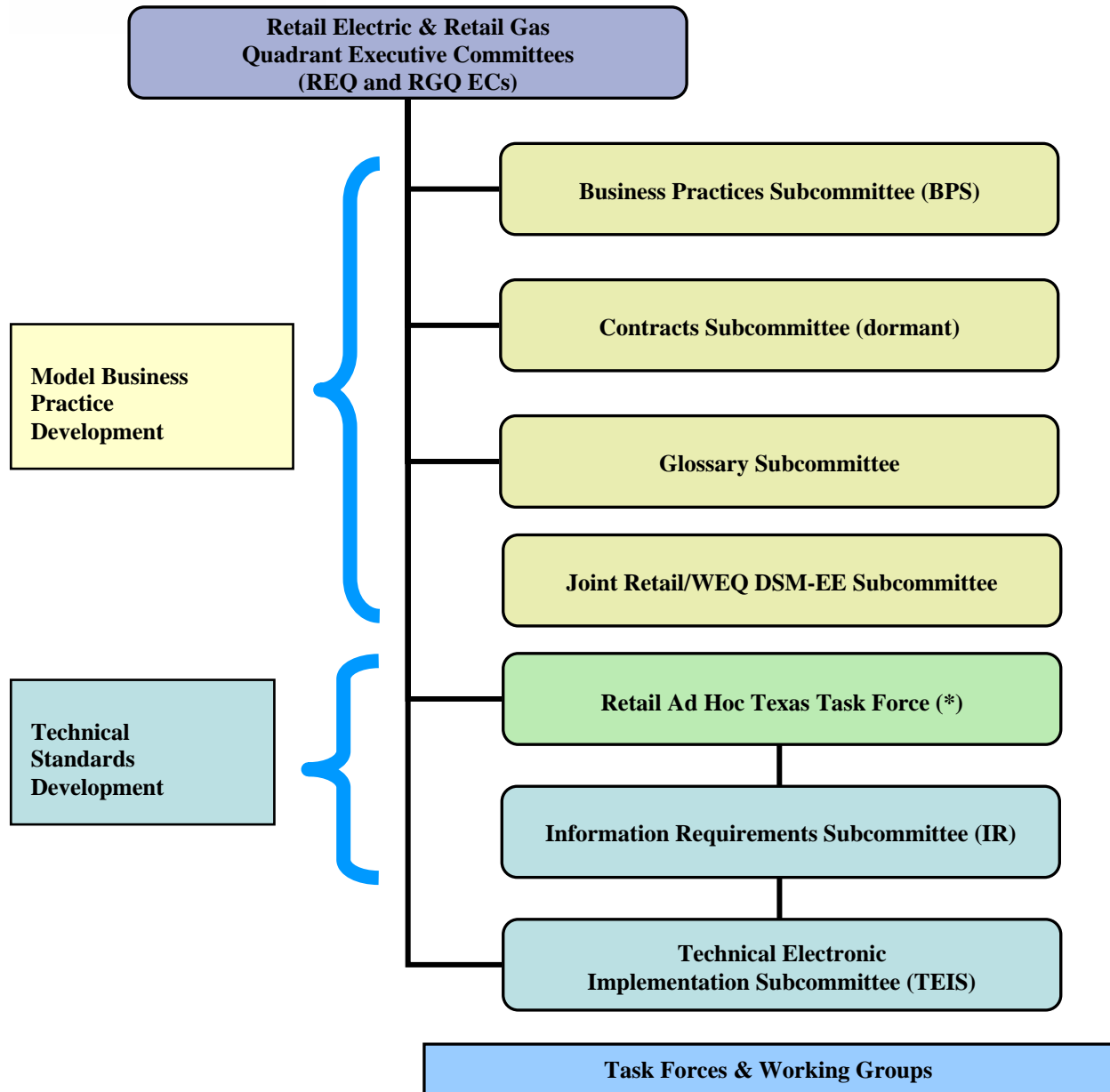
Examine Wholesale Gas Quadrant Non-EDM Standards for applicability to retail business practices.

Settlement Process: Reconcile energy schedules and energy delivered by suppliers within a given market.



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### NAESB Retail Subcommittee Leadership: <sup>vi</sup>

- Executive Committee: Mike Novak, Chair (RGQ), Ruth Kiselewich, Chair (REQ)
- Business Practices Subcommittee: Phil Precht (RGQ), Mary Edwards and Dan Jones (REQ)
- Information Requirements Subcommittee: Jennifer Teel (REQ)
- Technical Electronic Implementation Subcommittee: TBD
- Glossary Subcommittee: Don Sytsma (RGQ), Mary Edwards and Patrick Eynon (REQ)
- DSM-EE Subcommittee: Ruth Kiselewich, David Koogler (REQ), Roy True (WEQ), and Paul Wattles (WEQ)
- Retail Ad Hoc Texas Task Force: Debbie McKeever (REQ), Jennifer Teel (REQ), and Susan Munson (REQ)

(\*) The Retail Ad Hoc Texas Task Force may draft MBPs, process flows, implementation guides and technical standards supportive of the Registration Agent.



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### Retail 2009 Annual Plan End Notes:

<sup>i</sup> As outlined in the NAESB Bylaws, the REQ and RGQ will also address requests submitted by members and assigned to the REQ and RGQ through the Triage Process.

<sup>ii</sup> Dates in the completion column are by end of the quarter for completion by the assigned committee. The dates do not necessarily mean that the standards are fully staffed to be implementable by the industry, and/or ratified by membership. If one item is completed earlier than planned, another item can begin earlier and possibly complete earlier than planned. There are no begin dates on the plan.

<sup>iii</sup> The assignments are abbreviated. The abbreviations and committee structure can be found at the end of the annual plan document.

<sup>iv</sup> The DSM-EE subcommittee is expected to be split into several separate subcommittees to support concurrent development of separate standards sets. The split is to take place at the end of May after which the assignments will be modified.

<sup>v</sup> This work is considered routine maintenance and thus the items are not separately numbered. The REQ and RGQ ECs will assign maintenance efforts on a request-by-request basis.

<sup>vi</sup> The ECs and the subcommittees can create task forces and working groups to support their development activities for development of model business practices and technical standards.



## NORTH AMERICAN ENERGY STANDARDS BOARD

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October 9, 2009  
Filed Electronically

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street N.E., Room 1A  
Washington, D.C. 20585

RE: Standards for Business Practices of Public Utilities (Docket No. RM05-5 et al)

Dear Ms. Bose:

The North American Energy Standards Board ("NAESB") herewith submits this report to the Federal Energy Regulatory Commission ("FERC" or "Commission") regarding errata to Versions 001, 002.0 and 002.1 of the NAESB Wholesale Electric Quadrant ("WEQ") Standards, provided to the Commission on December 21, 2007, August 29, 2008 and February 19, 2009, respectively. This NAESB report is voluntarily submitted by NAESB in response to Docket Nos. RM05-5 et al. The NAESB WEQ Version 001 standards were ratified by the NAESB membership and published on October 31, 2007; Version 002.0 was ratified and published on September 30, 2008; and Version 002.1 was ratified and published on March 11, 2009. The minor corrections to WEQ-008 included in this report were unanimously adopted by the WEQ Executive Committee on August 18, 2009<sup>1</sup>.

The report is being filed electronically in Microsoft® Word® 2003 and in Adobe Acrobat® Print Document Format (.pdf). All of the documents are also available on the NAESB web site (www.naesb.org). Please feel free to call me at (713) 356-0060 or refer to the NAESB website (www.naesb.org) should you have any questions or need additional information regarding the errata to the NAESB WEQ Versions 001, 002.0 or 002.1 standards or any other NAESB work products.

Respectfully submitted,

*Rae McQuade*

Ms. Rae McQuade

President & COO, North American Energy Standards Board

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<sup>1</sup> The August 18, 2009 WEQ Executive Committee draft meeting minutes can be found through the following hyperlink:  
[http://www.naesb.org/pdf4/weq\\_ec081809dm.doc](http://www.naesb.org/pdf4/weq_ec081809dm.doc)



## NORTH AMERICAN ENERGY STANDARDS BOARD

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October 9, 2009

cc:

Chairman Jon Wellinghoff, Federal Energy Regulatory Commission  
Commissioner Sudeen Kelly, Federal Energy Regulatory Commission  
Commissioner Philip D. Moeller, Federal Energy Regulatory Commission  
Commissioner Marc Spitzer, Federal Energy Regulatory Commission

Mr. Thomas R. Sheets, General Counsel of the Commission, Federal Energy Regulatory Commission  
Mr. Joseph McClelland, Director, Office of Electric Reliability, Federal Energy Regulatory Commission  
Ms. Jamie L. Simler, Director, Office of Energy Policy and Innovation, Federal Energy Regulatory Commission

Mr. Michael Goldenberg, Senior Attorney, Office of General Counsel, Federal Energy Regulatory Commission  
Mr. Bruce McAllister, Office of Energy Policy and Innovation, Federal Energy Regulatory Commission

Mr. Ralph Cleveland, Chairman and CEO, North American Energy Standards Board  
Mr. William P. Boswell, General Counsel, North American Energy Standards Board

Mr. David Cook, General Counsel, North American Electric Reliability Corporation  
Mr. Andrew Rodriguez, North American Electric Reliability Corporation

**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

**Standards for Business Practices and                    )**  
**Communication Protocols for Public Utilities        )**

**Docket No. RM05-17-000**  
**Docket No. RM05-5-000**

**REPORT OF THE NORTH AMERICAN ENERGY STANDARDS BOARD**

The North American Energy Standards Board ("NAESB") is voluntarily submitting this report in accordance with the Commission's Orders in the above referenced docket. The report is filed in response to the Commission's Orders in FERC Order Nos. 676-C, 676-D and 693 as related to NAESB standard WEQ-008 Appendix D. The report is in two parts – the errata for NAESB Wholesale Electric Quadrant ("WEQ") Versions 001, 002.0 and 002.1 Standards; and Notice to WEQ Members of Executive Committee Adoption of Minor Corrections, including the NAESB Operating Procedure for Minor Clarifications and Corrections to Standards.

Errata for NAESB WEQ Standards Versions 001, 002.0 and 002.1

October 9, 2009

This Appendix contains the errata for the following NAESB WEQ Version 001, 002, 002.1 Standards:

Minor Corrections:	WEQ-008-1.4	Delete the section heading and text and mark the section number as "RESERVED"
	WEQ-008 Appendix D	Delete the appendix heading and text and mark the appendix as "RESERVED"

Minor Correction as approved by the NAESB WEQ Executive Committee on August 18, 2009



## North American Energy Standards Board

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### Minor Correction Request

**Quadrant:** Wholesale Electric Quadrant (WEQ)  
**Business Practice:** WEQ-008  
**Submitted By:** WEQ Business Practices Subcommittee  
**Date:** August 12, 2009

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The WEQ Business Practices Subcommittee (BPS) is requesting that the Executive Committee (EC) modify the WEQ Business Practice WEQ-008 to support the recommendation from NERC that the market flow threshold be changed from zero percent to five percent. This minor correction will address WEQ Annual Plan Item 1.b.ii "Update WEQ-008 Appendix D to include the Market Flow Threshold Percentage recommended by NERC working group/task force."

### Background Information

The WEQ BPS is recommending that this minor correction be approved by the WEQ EC in response to the results of the NERC Operating Reliability Subcommittee (ORS) Market Flow Threshold Task Force. The Task Force was charged with reviewing the results of the field test and providing a recommendation to the NERC ORS and NERC TLR Standards Drafting Team. The objective of the field test was to determine a market flow threshold that will allow the three markets (Midwest ISO, PJM and SPP) to consistently meet their relief obligations during TLR.

Based on discussions held with the NERC ORS Market Flow Threshold Task Force representatives, draft meeting minutes from the July 23, 2009 NERC TLR Standards Drafting Team, and email exchanges between the BPS co-chairs and ORS Chair, we anticipate these groups will approve the five percent curtailment threshold. This approval will constitute NERC agreement that the change to the five percent curtailment threshold will address the reliability concern of the markets being unable to consistently meet their relief obligations under the zero percent curtailment threshold.

The WEQ BPS is proposing this minor correction to stay in lock step with NERC in addressing reliability concerns.

### Minor Correction Changes

WEQ-008-1.4 - Delete the section heading and text and mark the section number as "RESERVED"

WEQ-008 Appendix D - Delete the appendix heading and text and mark the appendix as “RESERVED”<sup>2</sup>

### **Timing of Changes**

#### **NERC Timing**

- The NERC TLR Standards Drafting Team is expected to approve the five percent curtailment threshold recommendation when it meets on August 25, 2009.
- The NERC ORS is expected to approve the five percent curtailment threshold recommendation when it meets on September 1, 2009.
- Following these approvals an informational presentation will be made to the NERC Operating Committee on September 15, 2009
- An informational presentation will be made to the NERC Standards Committee during either their September or October 2009 meeting.

#### **NAESB**

- Upon approval of this minor correction, NAESB will hold the minor correction in abeyance until the NERC approval of the five percent curtailment threshold.
- The minor corrections will be applied to Version 1.0, Version 2.0, and Version 2.1 of the NAESB WEQ Business Practice Standard only after the NERC approval of the five percent curtailment threshold. Once the minor corrections have been applied they will be filed with the FERC.

### **Other Considerations**

As Appendix D includes components other than the Market Flow Curtailment Threshold, the WEQ Business Practices Subcommittee will review the WEQ-008 Appendix D Regional Difference to determine if any components of it may be included in the recommendation to support 2009 WEQ Annual Plan 1.b.i “Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection.”

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<sup>2</sup> WEQ-008 Appendix D was originally added to the NAESB TLR Business Practice Standards to document Midwest ISO, PJM, and SPP use of a curtailment threshold percent which is different from the rest of the Eastern Interconnection. The recommendation to be approved by NERC will result in the percentage being the same for the entire Eastern Interconnection.

Notice to WEQ Members of Executive Committee Adoption of Minor Corrections  
NAESB Operating Procedure for Minor Clarifications and Corrections to Standards  
October 9, 2009

This Appendix contains the correspondence sent to all Wholesale Electric Quadrant members notifying them of the Executive Committee action taken on the minor correction, requesting comments that opposed the minor correction, and informing them of future actions and timelines related to the minor corrections. It also contains the excerpt from the NAESB Operating Procedures detailing the procedures to be followed for minor clarifications and corrections to existing NAESB Standards.

Notice to WEQ Members of Executive Committee Adoption of Minor Corrections  
NAESB Operating Procedure for Minor Clarifications and Corrections to Standards

October 9, 2009



## North American Energy Standards Board

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August 25, 2009

**TO:** NAESB Wholesale Electric Quadrant (WEQ) Members and Interested Industry Participants  
**FROM:** Jonathan Booe, Staff Attorney  
**RE:** Minor Correction to NAESB WEQ Version 1.0, 2.0 and 2.1 approved by the WEQ Executive Committee on August 18, 2009

---

Dear WEQ Members:

The WEQ Executive Committee voted unanimously to adopt a minor correction to NAESB WEQ Versions 1.0, 2.0 and 2.1, deleting WEQ-008-Appendix D. This minor correction addresses WEQ Annual Plan Item 1.b.ii, "Update WEQ-008 Appendix D to include the Market Flow Threshold Percentage recommended by NERC working group/task force." The minor correction can be found at the following link: [http://www.naesb.org/pdf4/weq\\_mc082509\\_attach1.doc](http://www.naesb.org/pdf4/weq_mc082509_attach1.doc).

The draft minutes from the WEQ Executive Committee meeting on August 18, 2009 will be posted shortly. The minor correction can be accessed on the NAESB web site at the following address: [http://www.naesb.org/weq/weq\\_reqcom.asp](http://www.naesb.org/weq/weq_reqcom.asp). For further information on the minor correction as submitted by the NAESB WEQ Business Practice Subcommittee, please contact Mr. Ed Skiba, (317) 249-5377 or Mr. Jim Busbin, (205) 257-6357.

Pursuant to NAESB's procedures for adopting minor corrections (found at pp. 18-19 of the NAESB Operating Procedures (NAESBOPs) and shown following), the public comment period for the minor correction will begin today, August 25, 2009, and end on September 8, 2009. If no comments are received, the corrections will be applied to NAESB WEQ Version 1.0, 2.0 and 2.1 and become effective at some time after the 30 day application period concludes, however, the effective date is dependent on the successful conclusion of the NERC Market Flow Threshold Percentage Field Test. At such time the correction will be filed with the Commission

Should you have any concerns or issues with the minor correction, please notify the NAESB office by October 8, 2009 (email: [naesb@naesb.org](mailto:naesb@naesb.org), fax 713-356-0067).

Best Regards,

*Jonathan Booe*

Notice to WEQ Members of Executive Committee Adoption of Minor Corrections  
NAESB Operating Procedure for Minor Clarifications and Corrections to Standards

October 9, 2009

**Procedures for Minor Corrections as excerpted from the NAESB Operating Procedures**

## D. Minor Clarifications and Corrections to Standards

Minor clarifications and corrections to existing standards include: (a) clarifications or corrections made by a regulatory agency to standards that are of a jurisdictional nature, or by the American National Standards Institute or its successor; (b) clarifications or corrections to the format, appearance, or descriptions of standards in standards documentation; (c) clarifications or corrections to add code values to tables; and (d) clarifications and corrections that do not materially change a standard.

Any request for a minor clarification or correction to an existing standard should be submitted in writing to the executive director. This request shall include a description of the minor clarification or correction and the reason the clarification or correction should be implemented.

## 1. Processing of Requests

The executive director shall promptly notify the EC and any appropriate subcommittee(s) of the receipt of the request. The members of the applicable quadrant's EC shall promptly determine whether the request meets the definition of a minor clarification or correction. Through the decision of the vice chair of the applicable quadrant, this determination may be delegated to one of the quadrant's subcommittees, with the concurrence of the subcommittee chair, in which case the subcommittee shall make a prompt decision.

If the request is determined to meet the definition of minor clarification or correction, the applicable quadrant's EC, with input from any subcommittee(s) to which the request has been forwarded, shall act on the request within one month of its receipt. A meeting to discuss the request is not required; the decision may be made by notational vote. A simple majority of the votes received shall determine the outcome. The members of the applicable quadrant's EC shall be given at least three working days to consider and vote on the request.

## 2. Public Notice

The results of the vote on the request for a minor clarification or correction shall be posted on the NAESB website and the members of the applicable quadrant shall be notified of the request by e-mail. If the request has been approved by the applicable quadrant's EC, the notification shall include a brief description of the request, the contact name and number of the requester so that further information can be obtained, and the proposed effective date of the clarification or correction. The proposed effective date of the minor clarification or correction shall normally be one month from the date of the public notice.

Any interested party shall have an opportunity to comment on the request, and the comments shall be posted on the NAESB website. The comment period is two weeks.

## 3. Final Disposition of Approved Requests

If no comments are received on an approved request, the standard shall be clarified or corrected as specified in the approved request on the effective date proposed. If comments are received, they shall be forwarded to the members of the applicable quadrant's EC for consideration. Each comment requires a public written response from the applicable quadrant's EC. The applicable quadrant's EC shall determine whether changes are necessary as a result of the comments.

Members of the applicable quadrant's EC shall be given three working days to consider the comments and determine the outcome, which shall be decided by a simple majority of the votes received. A meeting to discuss the request is not required; the decision may be made by notational vote. The standard shall be clarified or corrected in accordance with the outcome of the vote, effective with the completion of voting, and notice thereof shall be posted on the NAESB website.



## NORTH AMERICAN ENERGY STANDARDS BOARD

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October 2, 2009

Filed Electronically Using the FCC's Electronic Comment Filing System

The Honorable Marlene H. Dortch  
Commission's Secretary  
Office of the Secretary  
Federal Communications Commission  
236 Massachusetts Avenue, N.E., Suite 110  
Washington, D.C. 20002

RE: Comments – NBP Public Notice #2, GN Docket Nos. 09-47, 09-51 and 09-137

Dear Ms. Dortch:

The North American Energy Standards Board ("NAESB") appreciates the opportunity to offer these comments to NBP Public Notice #2, GN Docket Nos. 09-47, 09-51 and 09-137 to the Federal Communications Commission ("FCC" or "Commission").

While our comments are more general than the questions posed in request regarding the suitability of communications technologies, availability of communications networks, spectrum, real-time data, and home area networks; they are directed to decisions the FCC may make on the applicability of industry standards. Application of industry standards can support the advanced infrastructure and services as a foundation for the efficient implementation of Smart Grid technology. We would offer that the standards considered should be developed in a process that embodies the following characteristics:

- **Transparency.** Transparency in decision making is a key factor in garnering support. Transparency includes both the identification of the decision makers and how decisions were made. Transparency applies to standards development, standards selection and it also applies to the development of the plans and strategies. While providing adequate transparency can take time, it has been our experience that it expedites industry acceptance, support, and market implementation.
- **Inclusion.** Stakeholders should be given the opportunity to take part in the decision making and standards development. Reaching out to trade associations and industry organizations to encourage their stakeholders to participate has proven essential in assuring that diverse groups are made aware of the planned standards development activities. Trade associations, industry organizations, regional groups and the industry itself play key role in soliciting a broad and regionally diverse group of participants. Regulatory staff, both state and federal should be encouraged to participate to ensure that directions taken support their policies.
- **Balance.** Decision making, particularly for standards that have broad applicability, should not only include the stakeholders who will be responsible for modifying their business processes to implement the standards, but also the service providers. The market interests should be balanced and there are a number of ways in which this balance can be achieved. Balance of geographic areas can be important when the decisions made or the standards developed are not specific to a given region, but rather are intended to apply more broadly. Equally important, those entities either politically accountable for the success or operationally accountable for the success of the standards and related decisions must have a strong voice in the overall planning and strategic



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sessions, and also in the identification of standards needed, the development of the standards and the ultimate adoption of the standards.

- Documented and Accessible Process. Participants should have access to the process by which the standards are developed and also the process by which related decisions are reached. Importantly, an appeal process should be defined not only as it pertains to endorsement of standards, but also to the standards development process itself.

The above four characteristics for standards setting made are particularly important when the standards may be the subject of regulatory action either at the state or federal level. Ensuring the broadest level of inclusion, balance of interests, transparency in all aspects and easily accessible documentation on the process strengthens the work products and supports building industry consensus – crucial when the work products are intended to be forwarded to regulators for their consideration.

We look forward to continuing to participate in your process as the needed Smart Grid suite of standards and specifications are adopted and put to use in the energy market, and we are grateful for the opportunity to contribute in the priority action plan efforts outlined by the National Institute of Standards and Technology.

With Best Regards,

*Rae McQuade*

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Rae McQuade, President, NAESB

cc: Ralph Cleveland, Chairman of the NAESB Board of Directors  
Cade Burks, Retail Electric Quadrant Vice Chairman of the NAESB Board of Directors  
Michael Desselle, Wholesale Electric Quadrant Vice Chairman of the NAESB Board of Directors  
William P. Boswell, NAESB General Counsel  
Jonathan Booe, NAESB Counsel



## North American Energy Standards Board

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October 15, 2009

**TO:** NAESB Executive Committee  
**FROM:** Rae McQuade  
**RE:** Schedule of 2010 Meetings

Below is the schedule of 2010 meetings for the Board of Directors, Advisory Council and Executive Committee.

### 2010 Calendar of Board and Advisory Council Meetings

Date	Meeting	Location
February 13	Advisory Council Meeting	Washington D.C. – Renaissance Washington Hotel (in conjunction with NARUC Winter Meeting)
March 25	Board of Directors	Houston – Marriott IAH
June 24	Board of Directors	Houston – Marriott IAH
September 23	Board of Directors, Meeting of the Members and Strategic Session	Houston – Marriott IAH
December 9	Board of Directors	Houston – Marriott IAH

### 2010 Calendar of Executive Committee Meetings

Date	Meeting	Location
February 2-4	Executive Committee (WEQ, Retail, WGQ)	TBD
May 11-13	Executive Committee (WEQ, Retail, WGQ)	TBD
August 17-19	Executive Committee (WEQ, Retail, WGQ)	TBD
October 26-28	Executive Committee (WEQ, Retail, WGQ)	TBD

The locations for the Executive Committee meetings will be determined shortly. The Retail Executive Committee meetings will be held by conference call and web cast unless otherwise determined by the retail leadership.