

Coordinate Interchange

Purpose:

The purpose of this standard is to define procedures for market participants to request the implementation of Interchange Transactions.

Applicability:

This Standard applies to:

Purchasing Selling Entity, Balancing Authority, Reliability Coordinator, Load Serving Entity, Market Operator, Transmission Service Provider, Scheduling Agent.

004-0 Definitions:

Approval Entity – An entity that has approval rights for an Interchange Transaction Tag. This includes the Transmission Service Providers (TSP), Balancing Authorities (BA), Purchasing-Selling Entities (PSE), and Load Serving Entities (LSE) involved in the Interchange Transaction.

Balancing Authority (BA) – The entity responsible for integrating resource plans ahead of time, for maintaining load-interchange-generation balance within a Balancing Authority Area, and for supporting Interconnection frequency in real time.

Balancing Authority Area - An electrical system bounded by interconnection (tie-line) metering and telemetry, where the Balancing Authority controls (either directly or by contract) generation to maintain its Interchange Schedule with other Balancing Authority Areas and contributes to frequency regulation of the Interconnection.

Checkout Process – The method by which any two entities in the utility industry routinely perform a confirmation of schedules for a period of time.

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.

Interchange Transaction - An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority boundaries.

Interchange Transaction Tag (Tag) – An Interchange Transaction being submitted for implementation according to Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification*

Interconnection – Any one of the three major electric system networks in North America: Eastern, Western, and ERCOT.

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 Operator – An entity that administers a market that integrates capacity, energy, balancing resources, and transmission resources to achieve an economic, reliability-constrained dispatch of resources.

Market Period – The period of time beginning when a Requesting PSE is making purchase, sale, and transmission service arrangements needed to support an Interchange Transaction Tag through the time when the Sink BA (Tag Authority) receives the Market Period approvals.

Purchasing-Selling Entity (PSE) – The entity that purchases or sells and takes title to energy capacity and interconnected operations services. PSE's may be affiliated or unaffiliated merchants and may and may not own generating facilities.

Reliability Coordinator (RC) - An entity that provides the security assessment and emergency operations coordination for a group of Balancing Authorities, Transmission Service Providers, and Transmission Operators..

Reliability Period – The segment of time beginning with the Sink BA requesting approvals from the reliability Approval Entities until the completion of the physical flow of the energy associated with an Interchange Transaction Tag.

Requesting PSE – The PSE submitting the Interchange Transaction Tag.

Scheduling Agent – 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.

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 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).

Transmission Service Provider (TSP) – The entity that administers the transmission tariff and provides transmission services to qualified market participants under applicable transmission service agreements.

Business Practices Requirements

004-1 All requests to implement bilateral Interchange Transactions, and certain Interchange Schedules, shall be accomplished by the submission of a completed Interchange Transaction Tag to the Sink BA.

004-1.1 Interchange Transaction Tags for Interchange Transactions crossing Interconnections shall be in accordance with **Appendix A “Interchange Transaction Tagging Between Interconnections”**.

004-1.2 In the event of E-Tag system component failure, the requirements and procedures contained within **Appendix B “Electronic Tagging Service Performance Requirements and Failure Procedures”** shall be followed

004-1.3 It shall be the responsibility of the load serving Purchasing-Selling-Entity (PSE), or their designee, to ensure the completed Interchange Transaction Tag has been submitted to the Sink BA and that the Interchange Transaction Tag contains all reliability required information specified in NERC Version 0 Standard INT-001-0, Attachment 1-INT-001-0.

004-1.4 Approval Entities shall only be allowed to take actions against Interchange Transaction Tags as specified in **Appendix C “Interchange Transaction Tag Actions”**.

004-1.5 A completed Interchange Transaction Tag shall contain, at a minimum, the information specified in Appendix D **“Required and Correctable Interchange Transaction Tag Data”**.

004-1.6 The completed Interchange Transaction Tag shall be submitted to the Sink BA in accordance with the timing requirements contained in NERC Version 0 Standard INT-001-0, Attachment 1-INT-001-0.

- 004-2** All energy purchase, energy sale, and transmission service arrangements necessary to create the Interchange Transaction Tag and implement the bilateral Interchange Transaction shall be performed and verified by the Requesting PSE prior to the Interchange Transaction Tag being submitted to the Sink BA.
- 004-2.1** The Requesting PSE shall have the right to delegate this responsibility to the Market Operator.
- 004-3** The completed Interchange Transaction Tag, including all updates and market modifications, shall be forwarded by the Sink BA to the appropriate Approval Entity(s) for a Market Period assessment.
- 004-3.1** In addition to those entities specified by NERC standards, PSEs providing generation and LSEs shall have approval rights.
- 004-4** The results of the Market Period assessment (approval or denial) by the Approval Entities shall be promptly communicated back to the Sink BA. The Sink BA shall notify the Requesting PSE, and to all other involved parties, the results of the assessment.
- 004-4.1** Unless denied by an Approval Entity, the Interchange Transaction is considered approved when all involved parties receive from the Sink BA the results of each Approval Entity's assessment.
- 004-4.2** All denials of an Interchange Transaction Tag by any Approval Entity shall be accompanied by the reason for such denial.
- 004-5** Any changes to the status of an Interchange Transaction Tag during the Market Period assessment shall be communicated by the requesting PSE to the Sink BA.
- 004-6** The preferred method of submitting the Interchange Transaction Tag to the Sink BA shall be electronic and in accordance with the Version 1.7.095 NERC Transaction Information Systems Working Group (TISWG) *Electronic Tagging Functional Specification*
- 004-6.1** A backup or redundant electronic system shall be available for immediate use should the primary electronic means become disabled.
- 004-6.2** Submitting an Interchange Transaction Tag to the Sink BA via facsimile is acceptable only as a last resort when the electronic means and its required backup or redundant system are not available.

- 004-7** Interchange Transaction Tag corrections for non-reliability related data shall be allowed prior to the Interchange Transaction Tag's approval/denial by the Approval Entities.
- 004-7.1** Timing for market related corrections shall be in accordance with NERC Version 0 Standard INT-004-0, Attachment 1-INT-004-0.
- 004-8** The Requesting PSE shall have the right to modify an Interchange Transaction that is in progress or scheduled to be started. Modifications may include changes in contracts, economic decisions, or other market-based influences.
- 004-8.1** Interchange Transaction Tag modifications made to the "Implemented" Interchange Transaction Tag or its committed transmission reservation for market-related issues by the Requesting PSE, or its designee, must be submitted to the Sink BA and all affected parties within the time requirements of NERC Version 0 Standard INT-004-0, Attachment 1-INT-004-0.
- 004-8.2** The Requesting PSE shall have the right to increase or decrease the Interchange Transaction Tag's energy and committed transmission(s) profile to reflect a desire to flow more or less energy or commit more or less transmission than originally requested. In the case of an increase, the Requesting PSE must provide the necessary transmission capacity which must be approved by all Approval Entities.
- 004-8.3** The Requesting PSE shall have the right to extend the Interchange Transaction Tag's energy profile to reflect a desire to flow energy during hours not previously specified. The Requesting PSE must provide the necessary transmission capacity which must be approved by all Approval Entities.
- 004-9** All parties involved in an Interchange Transaction shall have, or arrange to have, personnel and facilities on site and immediately available for notification of changes to the Interchange Transaction Tag from the beginning of the Market Period until the time when the energy flow of the Transaction has been completed.
- 004-10** Unless provided for under a FERC approved market mechanism, energy accounting for all Interchange Transactions shall be accomplished via Interchange Block Accounting.
- 004-11** Settlement of losses shall be either handled as financial or as payment in-kind in accordance with the Transmission Service Provider tariff.

- 004-11.1** For losses handled as payment in-kind, the Requesting PSE, or its designee, shall communicate to the Sink BA, via an Interchange Transaction Tag (either the original or a separate Interchange Transaction Tag), the MW losses and the entity the losses are with for each TSP/BA along the Interchange path.
- 004-12** All RAs, BAs, TSPs, PSEs, and other entities involved in an Interchange Transaction shall not disclose the Interchange Transaction information to any PSE not involved in the Interchange Transaction.
- 004-13** After a curtailment of an Interchange Transaction Tag has ended, the Sink BA shall return the Interchange Transaction Tag profile to the originally requested level, unless otherwise specified by the entity submitting the Interchange Transaction Tag.



004-A Appendix A

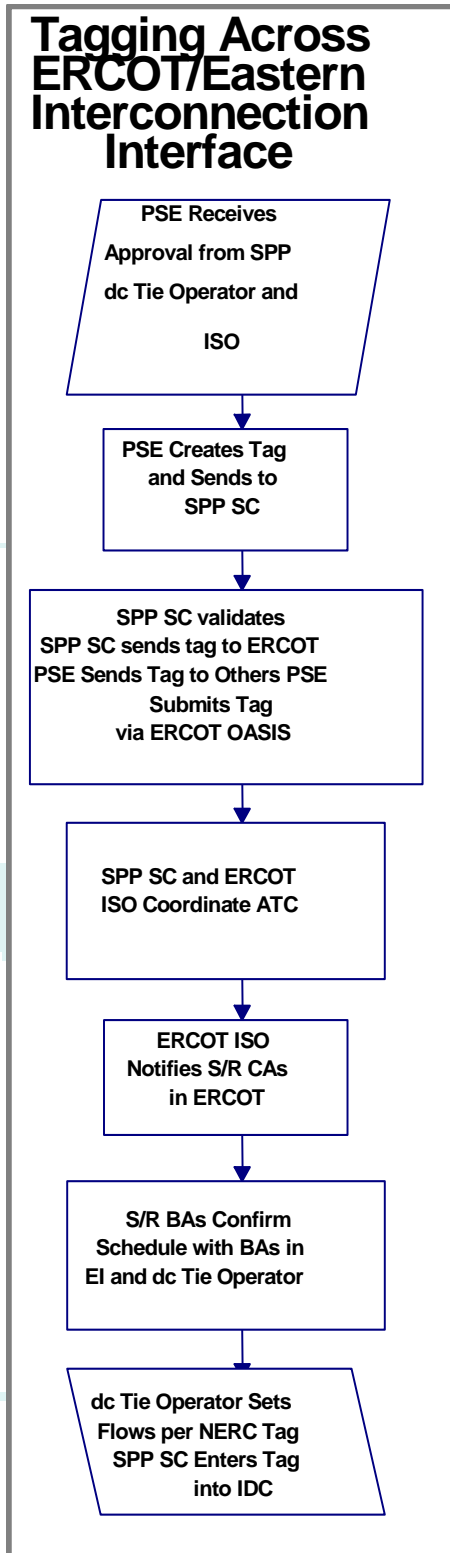
Interchange Transaction Tagging Between Interconnections

Between ERCOT and Eastern Interconnections

A Purchasing-Selling Entity that is seeking transmission arrangements to schedule energy between the ERCOT and Eastern Interconnections will coordinate through the SPP Reliability Coordinator. Requests for service must be made to the SPP Reliability Coordinator for service into or through SPP (including service across either the North or East DC Ties) via the SPP OASIS. Request for service must also be made in ERCOT via the ERCOT Scheduling System. The SPP Reliability Coordinator will coordinate approval of reservations and schedules involving the SPP portion of transmission service (including the DC ties) and service in ERCOT.

The following procedures are followed when scheduling transmission service between SPP and ERCOT:

- The Purchasing-Selling Entity must receive approval for DC tie service and transmission service in SPP from the SPP Reliability Coordinator for the proposed transaction and arrange required ancillary services.
- For all transmission service requests, the Purchasing-Selling Entity will create a NERC Interchange Transaction Tag (known as the Tag) and submit it to the SPP Reliability Coordinator. The SPP Reliability Coordinator will validate certain information on the and check that a reservation exists before approving the Tag. The approved Tag will be available to the parties to the transaction and



the ERCOT ISO.

- Simultaneous with submitting requests using the Interchange Transaction Tag to the SPP Reliability Coordinator (for next hour, non-firm and all other transmission service requests), the Purchasing-Selling Entity submits requests to the ERCOT ISO via the ERCOT Scheduling System. The MW profile information submitted to ERCOT must exactly match the information on the NERC Tag supplied to ERCOT by the SPP Reliability Coordinator. (See note.)
- The SPP Reliability Coordinator coordinates approval of the transaction if ATC is available in SPP and across the DC tie and works with the ERCOT ISO to coordinate ATC calculations in ERCOT-
- The ERCOT RC notifies the delivering/receiving ERCOT BA of the approved transaction and provides a copy of the Interchange Transaction Tag and ERCOT schedule request.
- The delivering/receiving ERCOT Balancing Authority communicates with the delivering/receiving control area outside of ERCOT, confirms the transaction/schedule, and confirms with the DC tie operator.
- The DC tie operator will follow the Interchange Transaction Tag when setting flows across the tie.
- The SPP Reliability Coordinator will use the Interchange Transaction Tag to populate the IDC and to determine constrained facility ATC in the operating horizon.
- ERCOT ISO requires transactions/schedules involving use of the DC ties to include the Interchange Transaction Tag reference in the comments field on the ERCOT schedule request.

Between Western and Eastern Interconnections

- All Interchange Transactions that cross the Interconnection Boundary, including next hour and same day service, will be submitted in E-Tag for inclusion in the Eastern Interconnection IDC.

Note: In ERCOT, there are two types of wholesale transmission services—planned and unplanned. Planned Transmission Service is service for nominated generating resources to specified loads. All other transmission service is unplanned.

Interchange Transaction where the sink is in the Eastern Interconnection

- The Purchasing-Selling Entity serving the load shall be responsible for submitting the E-Tag. The Purchasing-Selling Entity responsible for submitting the E-Tag will be required to submit the E-Tag in accordance with the time requirements in NERC Standard INT-001-0, Attachment 1-INT-001-0.
- The Transmission Service Providers and Balancing Authorities responsible for assessing the E-Tag will be required to assess the E-Tag in accordance with the time requirements in NERC Standard INT-001-0, Attachment 1-INT-001-0.

Interchange Transaction where the Sink is in the Western Interconnection

- The Purchasing-Selling Entity serving the load shall be responsible for submitting the E-tag.
- For Hourly/Multi-Hour Same Day Transactions, the sink Purchasing-Selling Entity in the Eastern Interconnection (last PSE before the DC Tie) shall be responsible for submitting the E-Tag.
- The Purchasing-Selling Entity responsible for submitting the E-Tag will be required to submit the E-Tag in accordance with the time requirements in NERC Standard INT-001-0, Attachment 1-INT-001-0.

The Transmission Service Providers and Balancing Authorities responsible for assessing the E-Tag will be required to assess the E-Tag in accordance with the time requirements in NERC's Version 0, Attachment 010-1, Subsection B – Western Interconnection

004-B Appendix B**Electronic Tagging Service Performance Requirements and Failure Procedures**

This document 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***Tag Agent Service Requirements***

Entities that are required to use Tag Agent Services are responsible for providing a Tag Agent Service with which 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 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 Tag Agent 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 Tag Agent 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.

Tag Approval Services

Entities that are required to employ Tag Approval Services are responsible for providing a Tag Approval Service as well as providing a level of redundancy; there are no exemptions from this requirement. At a minimum, Tag Approval Services may not have greater than 1.0% of the tags sent to their system within a calendar month be recorded by Tag Authority Services 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 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 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 available for investigation of any violations and the results of this investigation may be posted once finalized.

Tag Authority Services

As the 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

Tag Authorities 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, a Tag Authority Service must provide, at a minimum, the following:

- Two or more connections to the Internet, which may either be available concurrently or be switchable 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 Tag 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 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:
 1. Users of the system are sent notifications, via Email or 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 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).

Tag Authority Services may 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.

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 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, the Operator of a Tag Authority System may be required 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 by 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.

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

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 by 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.

Actors

Requesting PSE – The entity that prepares and submits a Tag and holds the transmission reservations being presented for use.

Path Participant – Any of the entities that are part of a schedule transaction.

Authority Service Entity – The entity that provides the Tag Authority Service for a tag. The Authority Service itself is a computer system that maintains the master database for the tag and communicates status with other computer systems. The Authority Service Entity is the utility industry entity that is responsible for providing the service. In E-Tag 1.7.095, this entity is the Sink BA.

Approval Entity – An entity that has approval rights for a transaction. In E-Tag 1.7.095, this includes the Transmission Service Providers, scheduling BAs, PSE providing generation, and Load Serving Entities.

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.

If adequate communication cannot be reestablished with other entities' scheduling systems the last resort will be to control by frequency.

The table below lists typical failures that might occur and the emergency actions that the entity will take to compensate for that failure.

Entity	Connectivity Problem	Backup actions
	Submit tag to Authority	Ask another entity in the transaction chain to submit the schedule for you. He then becomes the author. Create a backup paper copy of the schedule and fax to authority service entity and all approval entities in the transaction.
Path Participant	Not receiving update messages.	Use Recovery Process to resynchronize from authority service. Use telephone with Authority Service Entity to update status.
Authority Service Entity	Unable to send messages to generation or load control area.	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).
Authority Service Entity	Unable to send messages to an approval entity for an intermediate Transmission Provider or Control 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).
Authority Service Entity	Unable to send messages to an information only entity.	No Action required.
Authority Service Entity	Unable to receive messages.	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 Authority Service is down.

Entity	Connectivity Problem	Backup actions
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 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.

- 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.

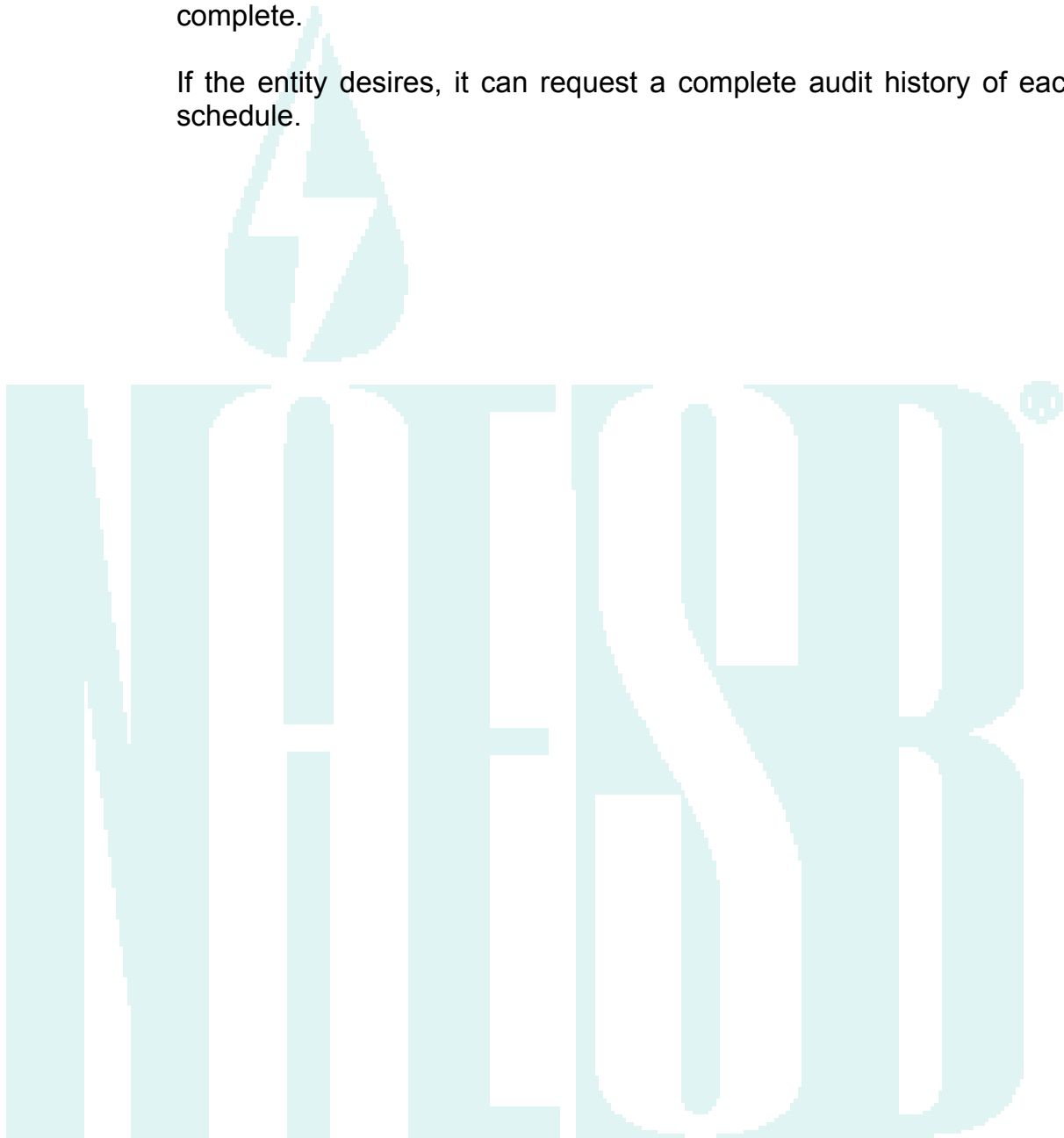
Recovery Process

The last backup issue is the recovery of current status when the communication link is reestablished. The recovery is accomplished

by a query to the 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 authority's database. When all authority services have been queried, the recovery is complete.

If the entity desires, it can request a complete audit history of each schedule.



004-C

Appendix C

Transaction Tag Actions

For Eastern and Western Interconnections

The table below explains the various tag actions that are possible, and the entities that are entitled to initiate these actions:

Desired Policy Action	Reason	Tagging Action	Initiated by	Result
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 a Tag	Economic	Request Profile Change – Append additional hours onto an existing transaction	Requesting PSE**	Tag is extended
Reduce a Tag	Economic	Request Profile Change – Decrease Energy flow or Committed	Requesting PSE**, Market Operator***	Profile is Decreased

Desired Policy Action	Reason	Tagging Action	Initiated by	Result
		Transmission Reservation(s) for a transaction for a specific set of hours		
Increase a 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 a Tag	Reliability (OSL 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, Scheduling Agent	Profile is Decreased
Reload a Tag	OSL 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, Scheduling Agent	Profile is Increased

Notes:

*Purchasing-Selling Entities and Load-Serving Entities 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.

PSE and LSE Approval Rights

Purchasing-Selling Entities providing generation and Load-Serving Entities have been granted the right, but not the obligation, to approve Transaction requests using their resources. If PSEs 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:

If the PSE...	Specified an Approval URL	The PSE should be granted rights to approve or deny
	Did not specify an Approval URL	The BA should have proxy approval rights for the PSE



004-D

Appendix D

Required and Correctable Tag Data

A. New Transactions

A new Interchange Transaction is a Transaction that has not yet been implemented or confirmed for implementation. Such Transactions must be presented to those entities that are responsible for the implementation of the Transaction in order that they may evaluate the Transaction request and determine whether or not the Transaction can be implemented. The following information is to be used to describe such a Transaction.

1. Market Information

1.1. Market Redispatch Information (only required if Transaction is MRD Transaction). (See “E-Tag Functional Specification Version 1.7095”)

1.2. Financial Path (Required) – the description of financially responsible parties for the transaction in order. This will typically start with a Purchasing-Selling Entity providing generation and finish with a Load Serving Entity, 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, a Load Serving Entity, and where applicable, Intermediate Purchasing-Selling Entities.

1.2.1.1. Energy Product Type (Correctable) – the type of energy delivered by the Energy Title Holder.

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.

1.2.1.3. Miscellaneous Information (Correctable) – information provided at the author’s option regarding the Transaction.

2. Physical Information

2.1. Physical Path (Required) – the description of physically scheduling parties for the transaction 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 and the Generator Operator.
 - 2.1.1.3. Miscellaneous Information (Correctable) – information provided at the Requesting PSE’s option regarding the Transaction.
 - 2.1.1.4. Energy Profile (Required) – energy to be produced by the Generator Owner for this Transaction.
- 2.1.2. Transmission (Required) – set of data describing the physical and contractual characteristics of a wheel (import, export, or through).
 - 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 (Correctable) – valid Point of Receipt for scheduled Transmission Reservation.
 - Point of Delivery (Correctable) – valid Point of Delivery for scheduled Transmission Reservation.
 - Scheduling Agent (Correctable) – 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.
 - 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.

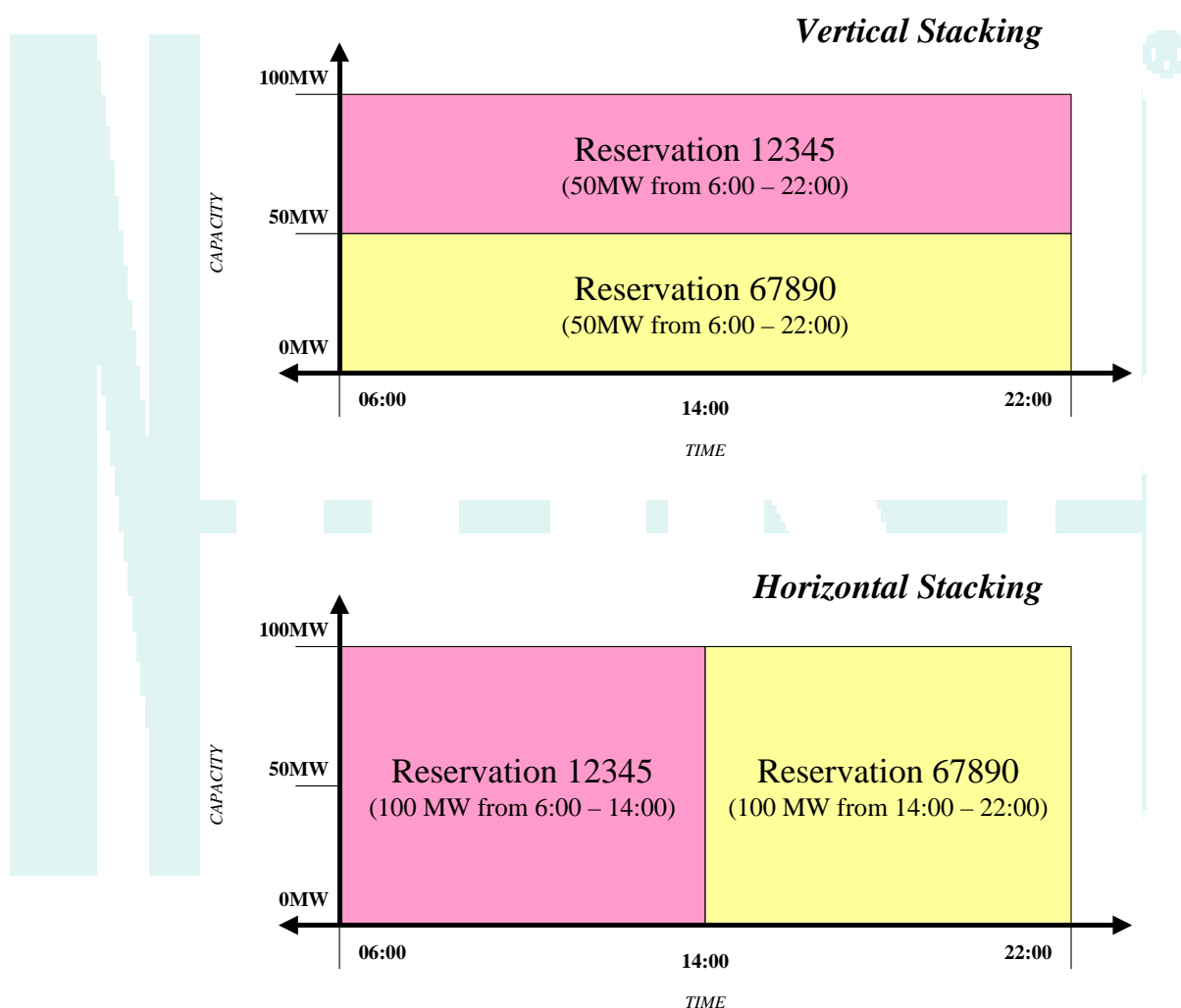
- Miscellaneous Information (Correctable) – information provided at the requesting PSE’s option regarding the transaction.
 - POR and POD Profiles (Required) – schedule of Energy Flow imported at the Point of Receipt and exported at the Point of Delivery.
 - Transmission Reservation Number(s) (Required) (Correctable) – reference to a particular transmission reservation being used to provide transmission capacity to support the transaction being described.
- 2.1.2.2.1. Transmission Product (Required) (Correctable) – Specifies the firmness of service associated with the transmission reservation being used.
- 2.1.2.2.2. Requesting PSE (Required) (Correctable) – identifies the entity that purchased and holds the transmission reservation being presented for use.
- 2.1.2.2.3. Transmission Reservation Profile (Required) - information describing the transmission reservation commitment associated with the Transmission Service Provider.
- 2.1.2.2.3.1. Committed Transmission Reservation Level (Required) – schedule of transmission reservation committed 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)

Curtailments and Reloads are special kinds of modifications to a transactions 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

Profile Modifications are changes to a 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 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 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