

**Assignments per July 8, 2003  
Seams Task Force Meeting**

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Seams Issues Matrix

Orig #	Assoc-iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
1			1.0	Energy Market Standardization	Non Standard Time Zone	All	All	All	Market Rule / Business Practice	No	Phil Cox - AEP	No		The lack of a standard Time Zone causes Market Inefficiencies
33			1.0	Transmission Service	Standard for Purchasing of Interhour Transmission	All	All	All	Market Rule / Business Practice	No	Tony Reed - Southern	No		The ability to purchase transmission after the top of the hour when the transmission service is predetermined as available in prior hour.
54			1.0	Congestion Management	Transmission service charge discounting	RTO Market to RTO Market	ISO New England	NY ISO			Joe Rossignoli - National Grid	G		Ability for TOs to discount TSC rates on external interfaces to selectively reduce export charges and encourage use of ties. The software exists, however, there does not appear to be any business incentives to exercise discounts.
57	Magenta		1.0	Generator Interconnection	Transmission interconnection procedures	RTO Market to RTO Market	ISO New England	NY ISO			Joe Rossignoli - National Grid	G		Need consistent approach to treating merchant transmission interconnection agreement and procedures among the ISOs.
77			1.0	Market Monitoring/ Compliance	Market Design - Day Ahead. Schedule Components				Financial approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Will different RTO congestion management systems enhance opportunities for gaming or affect generation dispatch efficiency? (Issue I.b.10)
83			1.0	Ancillary Services Market Standardization	Market Design - Day Ahead. Ancillary Service Market				Fundamental approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		When ancillary services are provided from within one RTO for another RTO, does the providing RTO recognize them as obligations within the seller's RTO? (Issue I.b.16)
98	Green		1.0	System Reliability	Market Design - Post Real Time. Settlement stages				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How does bidding or demand-side response between or among RTO's affect the scheduling and dispatch of obligations within the RTO's? Can these kinds of trades between RTOs be accommodated? Does trade of these services between RTOs have implications for either the exporting or importing RTOs ability to meet reliability criteria? (Title to power needs to be established) (Issue II).
102	Red		1.0	Recommend Deletion	Seams Between RTO Participants and Non-Participants	RTO Market to Non-RTO Market	RTO	Non-RTO Market	Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		
123			1.0	Lack of Information/ Specificity	GDLF calculation	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	?	
9			1.01	TTC/ATC	Transmission Calculations	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No		Transmission calculations are not consistent. Solution: Standardized TTC & ATC Calculations.
109			1.02	TTC/ATC	ATC Differences - Individual control areas determine ATC for jointly operated transmission interfaces. Differences in ATC calculations can confuse the marketplace, which may react by avoiding transactions that would otherwise be economic due to the uncertainty and perceived risk.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
116			1.03	TTC/ATC	ATC/AFC Coordination - MISO and PJM to coordinate with any external parties wishing to do so, respecting all significant flowgates external to their respective boundaries; availability and levels of service and curtailments for firm and non-firm, network and point to point	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	No	2	

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130			1.04	TTC/ATC	What happens when MISO and PJM and outside PJM/MISO firm and CBM exceed TTC - day ahead mechanism to reduce oversubscribed conditions	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	2	
136			1.05	TTC/ATC	Firm Transmission Service on IMO/MISO	RTO Market to RTO Market	NPCC	ECAR	Market Rule / Business Practice	No	Barry Green - Ontario Power Gen.	No		ATC postings between a physical reservation system and a financial reservation system
17			1.06	TTC/ATC	TTC-ATC calculation/posting	Other	HQ TransÉnergie	IMO	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No		Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations); Problems of TTC-ATC calculations coordination
18			1.07	TTC/ATC	TTC-ATC calculation/posting	Other	HQ TransÉnergie	NYiso	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No		Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations); Problems of TTC-ATC calculations coordination
19			1.08	TTC/ATC	TTC-ATC calculation/posting	Other	HQ TransÉnergie	ISO-NE	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No		Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations); Problems of TTC-ATC calculations coordination
20			1.09	TTC/ATC	TTC coordination	Other	HQ TransÉnergie	NYiso	Market Rule / Business Practice	Yes	Victor Bissonnette - HQ TransÉnergie	No		Disagreement between two operators on the physical capability of an interconnection (line 7040)
8			1.1	Transaction Scheduling	Scheduling	RTO Market to Non-RTO Market	Non-RTO Market	ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No		Inconsistent procedures among entities. Solution: Western Interconnection Standardized Interchange Scheduling Protocols.
21			1.10	TTC/ATC	TTC coordination	Other	HQ TransÉnergie	ISO-NE	Market Rule / Business Practice	Yes	Victor Bissonnette - HQ TransÉnergie	No		Disagreement between two operators on the physical capability of an interconnection (Phase II)
46	114, 57	Magenta	1.1	Affected System	Generation Interconnection Studies	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Generation Interconnections close to seam affects both areas
27.0		Red	1.11	TTC/ATC	ATC/AFC Coordination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Delete	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
30			1.12	TTC/ATC	Market allocations over flow gates are approved without regard to flow gate capacity resulting in over subscription of flow gates.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E		
26		Magenta	1.2	Affected System	Transmission expansion planning - coordination between systems and determine who is obligated to build and pay for improvements	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	1	Being reviewed by PJM/MISO.
76			1.2	Transaction Scheduling	Market Design - Day Ahead. Model objective function				Modeling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Do differences in the scheduling requirements (e.g., requirements for balanced schedules) between RTOs create seams problems for inter-RTO schedules? If so, can these problems be mitigated? (Issue 1.b.9)

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79			1.3	Transaction Scheduling	Market Design - Day Ahead. Other Scheduling Requirements				Financial approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Should the time intervals and submission times be synchronized to mitigate obstacles to inter- RTO trade? (Issue I.b.12)
114		Magenta	1.3	Affected System	Coordination of interregional planning including transmission facilities and generator interconnection procedures	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	1	
104			1.4	Transaction Scheduling	Transmission Checkout Failure - Operators curtail transactions due to mismatched tag data, different MW volumes, etc. The curtailment of transactions due to data incompatibility is disruptive to both the marketplace and the reliable operation of the grid.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
106			1.5	Transaction Scheduling	Transaction Scheduling - Inconsistent information and market timing rules lead to uncertainty and risk that discourage the scheduling of some inter-regional transactions.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
41			1.6	Transaction Scheduling	Scheduling of Load	All	NYISO	RTO	Market Rule / Business Rule	Yes	Marjorie Perlman - Energy East	No		RTOs have different ramp rates and scheduling requirements that require Market Participants to complete multiple submissions for the same transaction.
2		Green	2.0	System Reliability	MaxGen/MaxLoad 345Kv	Other	ECAR	ECAR	Physical	No	Phil Cox - AEP	No		Undersized Transmission Line
4			2.0	Transmission Service	Definition & treatment of Firm/nonfirm Transmission	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No		Annual Plan Item 4cii moved from MOS
74			2.0	Energy Market Standardization	Market Design - Day Ahead. Model objective function				Financial approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		What is the effect of linking energy and ancillary service markets in the optimizations on model coordination issues? (Issue I.b.7)
84			2.0	Ancillary Services Market Standardization	Market Design - Day Ahead. Ancillary Service Market				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How can AS bids be coordinated across three markets to avoid both double counting and inefficient limitations on bids? (Issue I.b.17)
94	14, 16		2.0	Market Monitoring/ Compliance	Market Design - Real Time. Imbalance Price				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Do penalties need to be the same in each RTO? (Issue I.d.4)
125			2.0	Lack of Information/ Specificity	Retention of former Cas in the model	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	3	
43	27.1, 117, 141		2.01	TTC/ATC	Allow Sharing Contract Tie Capacity between Entities across Seams	All	All	All	Market Rule / Business Practice	Limited	Carl Monroe, Southwest Power Pool	No	?	Lack of Coordination and Sharing of Tie Capacity is an artificial market barrier
27.1		Red	2.02	TTC/ATC	Contract Tie Capacity	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Delete	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
58			2.1	Transaction Scheduling	Controllable line scheduling	RTO Market to RTO Market	ISO New England	NY ISO		Northeast ISO	Joe Rossignoli - National Grid	G		Concept of Operations for general methodology to schedule controllable lines has been drafted. A multi-ISO stakeholder group (similar to JCAG) needs to be formed to review the draft Concept of Operations to provide stakeholder input.

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59			2.1	Congestion Management	Inter-control area congestion management / parallel flow management	RTO Market to RTO Market	ISO New England	NY ISO		Northeast ISO	Joe Rossignoli - National Grid	G		Develop congestion hedges across control area boundaries.
39			2.2	Transaction Scheduling	Controllable Line Scheduling	All	NYISO	RTO	Market Rule / Business Rule	Yes	Marjorie Perlman - Energy East	No		Concept of operations for general methodology to schedule controllable lines between RTOs. Being reviewed by NYISO
138			2.2	Congestion Management	Coordination of congestion	All	All	All	Business Practice	Yes	Karl Tammar - ISO/RTO Council	No		Several regional efforts are underway. Coordinate practices and methods between areas with different market approaches.
6			3.0	Transmission Service	Transmission Access	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - Various Transmission Providers	Steven Cobb - SRP	No		No transmission market one stop shopping available for the Western Interconnection - entities can't find needed information to efficiently conduct business on a preschedule or real-time basis. Solution: Common OASIS Site needed.
44			3.00	TTC/ATC	Calculation and Values of TRM and CBM consistent	All	All	All	Market Rule / Business Practice	Limited	Carl Monroe, Southwest Power Pool	F	?	Underutilization of Transmission Capacity
85			3.0	Ancillary Services Market Standardization	Market Design - Day Ahead. Ancillary Service Market					SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Does the RTO of the A/S seller recognize the transmission capacity reservation required to enable the reserves to respond for outages in the RTO of the buyer? (Issue I.b.18)
87			3.0	Energy Market Standardization	Market Design - Day Ahead. Acquisition Mechanism					SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Does unit commitment need to be standardized? Is this an area where each RTO can have its own method, which matches its resource mix and system responsiveness? (Rapid response of hydro gen. versus lead time requirements for thermal gen.) (Issue I.b.20)
95	14, 16		3.0	Market Monitoring/ Compliance	Market Design - Real Time. Penalties					SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Will inconsistent imbalance penalty practices hamper non-dispatchable resource sales across RTO boundaries? (Issue I.d.5)
129			3.0	Lack of Information/ Specificity	Selection process for market/TLR coordinated flowgates; inclusion of flowgates in PJM FTR/ARR auctions; flowgates with and without effective control by markets; updates to flowgate list, phase-in; dispute resolution; let RTO calculate flows outside of IDC and TLR; audit rights; confidentiality of data; consideration of flowgates outside PJM and MISO	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
45	27.5	Green	3.1	System Reliability	Coordination of Transmission and Generation Outages	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Both forced and planned outages
62			3.1	Congestion Management	Market Design - Prior to Day Ahead. Financial or Physical				Fundamental approach -- financial hedging and scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Must the offerings be identical? How can congestion management discontinuities be mitigated? (Issue I.a.3)
71			3.1	Transaction Scheduling	Market Design - Day Ahead. Model spatial granularity				Modeling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		To what extent do RTOs need to see other RTOs' scheduling information? (Issue I.b.4)
27.5		Green	3.2	System Reliability	Outage Maintenance Coordination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	?	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
63			3.2	Congestion Management	Market Design - Prior to Day Ahead. Option or Obligation				Fundamental approach -- financial hedging and scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Do different CM models create barriers to trade, and if so, how can these differences be mitigated? (Issue I.a.4)

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78			3.2	Transaction Scheduling	Market Design - Day Ahead. Schedule Components				Financial approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Can tools be developed for scheduling submission that assist the user in meeting any differences in protocols between RTOs? (Issue I.b.11)
12			3.3	Transaction Scheduling	Interchange/Intrachange Scheduling Data Exchange	All	Non-RTO Market/ISO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - WECC	Steven Cobb - SRP	No		Current E-Tagging process is inadequate for exchanging reliability and market data within the Western Interconnection. Solution: Electronic Scheduling
64			3.3	Congestion Management	Market Design - Prior to Day Ahead. Revenue Stream/ or Offset CM Cost				Fundamental approach -- financial hedging and scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Must the term of congestion offerings be identical? How can congestion management discontinuities be mitigated? (Issue I.a.5)
120	Green		3.3	System Reliability	Facilities in close electrical proximity under different RTOs - outage maintenance coordination, access and expansion planning	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
11			4.0	Market Monitoring/ Compliance	Market Oversight	All	Non-RTO Market/ISO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No		New and mature markets need oversight to ensure that existing rules are complied with and new rules are adequate in meeting the scenarios they were designed to govern. Solution: Independent Market Auditor or Monitor.
47	Green		4.0	System Reliability	Operational Model Updates	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Areas must have up to date models for operational use of other areas across the seam
55			4.00		Improved TTC/ATC posting									Monthly and yearly posting of TTC/ATC values to support transaction pre-scheduling. Clarify how the ATC values calculated by each ISO should be used to ascertain the ability of the interface to support transactions.
				TTC/ATC		RTO Market to RTO Market	ISO New England	NY ISO		Northeast ISO	Joe Rossignoli - National Grid	G		
86			4.0	Ancillary Services Market Standardization	Market Design - Day Ahead. Ancillary Service Market				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		All three propose auctions: Do the auctions have be identical? Is it possible to use price exchange (say as imputed bids) in connection with interactive calculation to minimize the spread between the A/S auctions? (Issue I.b.19)
121			4.0	Lack of Information/ Specificity	Market flow data - reflect ISN and SDX data	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	3	
56			4.1	Transmission Service	Multiple transmission service charge invoicing	RTO Market to RTO Market	ISO New England	NY ISO		Northeast ISO	Joe Rossignoli - National Grid	G		Companies that conduct business across Control Area borders are faced with receiving a TSC bill from each TO. A single charge should be provided to each transaction to the appropriate parties and revenues allocated to the TOs according to the appropriate usage formulas.
68			4.1	Congestion Management	Market Design - Prior to Day Ahead. Secondary Market				Fundamental approach -- financial hedging issue.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		To the extent that at a minimum congestion redispach occurs in an RTO (i.e. a limited energy market), can a method be developed to produce consistent prices at the boundaries? If not, can price discontinuities be tolerated or managed? (Issue I.b.1)
90			4.1	Energy Market Standardization	Market Design - Hour Ahead. Timing				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How does hour-ahead market integrate with neighbors who do not have hour-ahead process? (Issue I.c.2)

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70			4.2	Congestion Management	Market Design - Day Ahead. Congestion Management Market				Modeling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		If models with identical levels of detail for the West are not used by all three RTOs, do the various simplifications for areas outside any given RTO create problems in achieving a uniform set of redispatch prices? (Issue I.b.3)
105			4.2	Transmission Service	Export Charges (Pancaking) - Control-area specific export charges remove incentives to transact business when transaction margins are of the same magnitude or less than the prevailing export charges. Such charges include transmission and ancillary service components.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
137			4.2	Energy Market Standardization	Inconsistent Market Event Timelines	RTO Market to RTO Market	IMO	NYISO	Market Rule	No	Barry Green - Ontario Power Gen.	No		Timing issues between bid based markets (one example only - not knowing whether your bid has been accepted in "sink" market before having to commit in the "source" market).
22			4.3	Transmission Service	Rate pancaking elimination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	1	Being reviewed by PJM/MISO.
80			4.3	Congestion Management	Market Design - Day Ahead. Other Scheduling Requirements				Financial approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		To the extent that at a minimum congestion redispatch occurs in an RTO (i.e. a limited energy market), can a method be developed to produce consistent prices at the boundaries that send the same signal to the market? If not, can price discontinuities be tolerated or managed? (Issue I.b.13)
28			4.4	Transmission Service	Multiple transmission service charge invoicing	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	3	Being reviewed by PJM/MISO.
92			4.4	Congestion Management	Market Design - Real Time. Model objective function				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How much would a common dispatch interval mitigate against price discontinuities at boundaries? (Issue I.d.2)
38			4.5	Transmission Service	Rate Pancaking	All	NYISO	RTO	Market Rule / Business Rule	Yes	Marjorie Perlman - Energy East	No		Charges to Market Participants who conduct business over more than one RTO. Reciprocal agreements needed to eliminate these charges. NYISO and ISO-NE
132			4.5	Congestion Management	Interaction with American Transmission Company; possible joint redispatch agreement among ATC-PJM-Generators on ATC's system	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	K	3	
24	Red		4.6	Congestion Management	Improve Real Time use of transmission interfaces - regional dispatch coordination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	Delete	Being reviewed by PJM/MISO.
35			4.7	Congestion Management	LMP prices at borders of RTOs with markets	RTO Market to RTO Market	All RTOs with market	All RTOs with market	Market Rule / Business Practice		Raj Rana - AEP	No	3	
36			4.8	Congestion Management	Coordination of market based congestion hedging instruments, such as FTRs, between adjacent RTOs with markets, especially for out and thru' transactions	RTO Market to RTO Market	All RTOs with market	All RTOs with market	Market Rule / Business Practice		Raj Rana - AEP	No	3	
72			4.9	Congestion Management	Market Design - Day Ahead. Model spatial granularity				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		To the extent that at a minimum congestion redispatch occurs in an RTO (i.e. a limited energy market), can a method be developed to produce consistent day ahead prices at the boundaries? (Issue I.b.5)
48	Green		5.0	System Reliability	Communication of Computer Failures	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Needed for reliable operations and emergency operations

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61			5.0	Transmission Service	Market Design - Prior to Day Ahead. Congestion Revenue Rights (CRRs) [Firm Transmission Rights (FTRs) in MD02, FTOs in RTO West]				Fundamental approach -- financial hedging and scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Are all transmission rights both physical and financial required to be identical to mitigate the seams problems? (Issue #1.a.2)
69			5.0	Congestion Management	Market Design - Day Ahead. Energy Spot Market				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		In order to achieve a uniform set of redispatch prices, if that is necessary, do the network models have to be identical, with the exact system? Each time each one is used does it have to be synchronized with the other RTOs or is a single process required? In addition do the programs that use the models have to be identical in order to get the uniform set of redispatch prices? (Issue 1.b.2)
81			5.0	Ancillary Services Market Standardization	Market Design - Day Ahead. Congestion Prices.				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Can a "best practice" model for definition and acquisition of ancillary services products be developed to produce consistent prices at the RTO boundaries? (Issue 1.b.14)
91			5.0	Energy Market Standardization	Market Design - Hour Ahead. Energy Market, Congestion Management Market, and Ancillary Services Market				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Is it necessary to align real time markets? If so, can a method be developed to produce consistent real-time prices at the boundaries? (avoid an price discontinuity due to separate calculation of prices with different information.) (Issue 1.d.1)
110			5.00	TTC/ATC	ATC Manipulation - Market participants schedule transactions day-ahead and beyond with no intent to deliver energy. Cancellation in real-time by a market participant results in unused ATC, ramp capability that cannot be used by other market participants. Valuable capability is left unused.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
115			5.0	Lack of Information/ Specificity	Congestion Management Procedures including reciprocal coordination agreement, exchange of data for real-time and projected operations, SCADA, EMS, Operations Planning and Planning information and models; better granularity, avoid double counting, use of state estimator and LMP to enable RTOs to accurately and consistently quantify flows/impacts outside of NERC IDC to enable RTO to RTO and market to market congestion management to achieve greater efficiencies without calling TLRs; MISO and PJM and expansions to use same methods	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	I	1	
27.3		Red	6.00	TTC/ATC	Access/Expansion Planning	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Delete	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
65			6.0	Transmission Service	Market Design - Prior to Day Ahead. Duration				Fundamental approach -- financial hedging issue.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		To the extent that longer term transmission rights are needed for new construction, can agreement be reached to issue long term rights? (Issue 1.a.6)
75			6.0	Congestion Management	Market Design - Day Ahead. Model objective function				Modeling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Does the use of both AC and DC OPFs introduce compatibility problems? (Issue 1.b.8)

Seams Issues Matrix

Orig #	Assoc- iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
93			6.0	Energy Market Standardization	Market Design - Real Time. Dispatch interval				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Can a method be developed to produce consistent real-time prices at the boundaries? (avoid an price discontinuity due to separate calculation of prices with different information.)
111			6.0	Ancillary Services Market Standardization	Capacity Market - Differences in ICAP definitions, requirements, deliverability, and recall procedures have hampered the ability of suppliers to sell ICAP between Northeast ISOs (include regional resource adequacy model, external 30-minute reserves participation, harmonize demand response programs)	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
49	118	Green	6.1	System Reliability	Emergency Procedures	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Emergency procedures require operations across seams
107		Green	6.2	System Reliability	Transaction Curtailment - Transaction curtailments for security may extend beyond the reliability need due to differences in market timing. Extended curtailments are disruptive to both the marketplace and the reliable operation of the grid.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
118		Green	6.3	System Reliability	Emergency and Restoration Plans - operating procedures for Voltage Collapse and Stability	All	PJM	MISO	Market Rule / Business Practice	Included in Attachment A of MISO and PJM Reliability Plans	Jeff Mueller - PSEG	I	2	
128	14, 16	Green	6.4	System Reliability	Contingency plans; critical path analysis	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	2	
16	14		7.0	Ancillary Services Market Standardization	Compensation for Reactive Power	All	All	All	Market Rule / Business Practice and Physical	Yes / IIPTF	Mark Lively - Lively Utility	A - C	1	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
32			7.00	TTC/ATC	MISO- PJM market allocation will give preference to the market as Network over PTP even though the Market allocation may be a non paying transmission customer.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E		
66			7.0	Transmission Service	Market Design - Prior to Day Ahead. Duration				Fundamental approach -- financial hedging issue.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How will rights for loop flows (non-contract flows) in other RTOs be allocated/acquired? (Issue I.a.7)
88			7.0	Congestion Management	Market Design - Day Ahead. Centralized Unit Commitment.				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Does a recallable physical right conflict with a redispatch set in a day-ahead clearing process? (Issue I.b.21)
50	108	Green	7.1	System Reliability	Schedule Ramp Management	All	All	All	Market Rule / Business Practice	Limited	Carl Monroe, Southwest Power Pool	No	?	Ramping standard differences across the seams hinder business
96			7.1	Energy Market Standardization	Market Design - Real Time. Penalties				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Do settlement systems have to be common as long as price discontinuities at the boundaries are managed? (Issue I.e.1)
60			7.2	Energy Market Standardization	Cross-border price convergence	RTO Market to RTO Market	ISO New England	NY ISO		Northeast ISO	Joe Rossignoli - National Grid	G		The lack of price convergence at the control area boundaries may inhibit the desire of market participants to arbitrage between neighboring markets. This issue is being referred to the individual ISO Market Committees for further definition on the business issue that needs resolution.

Seams Issues Matrix

Orig #	Assoc-iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
108		Green	7.2	System Reliability	Failure of Transactions due to Ramping of Control Area Interchange - Desirable transactions between control areas may be "blocked" from access to the grid due to insufficient dispatch capacity to absorb large schedule changes while maintaining energy/load balance within the control area.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	2	
67			8.0	Transmission Service	Market Design - Prior to Day Ahead. Primary Release Mechanism				Fundamental approach -- financial hedging issue.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		There seems to be agreement here that a secondary market would be outside the RTO. If the resulting secondary market is not westwide, will coordination be needed? (Issue I.a.8)
97			8.0	Energy Market Standardization	Market Design - Post Real Time. Settlement stages				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How are inter-RTO settlements managed? (Includes the revenue adequacy issues related to achieving consistent prices.) (Issue I.e.2)
133			8.0	Congestion Management	Define "RTO area wide dispatch"	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
51		Green	8.1	System Reliability	Resource Adequacy	All	All	All	Physical	Limited	Carl Monroe, Southwest Power Pool	No	?	Parties in one area rely on resources in other areas. Validation of their reliance on the other area must be coordinated.
100		Green	8.2	System Reliability	Resource Adequacy. Resource Adequacy Assessment.				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		If there is an RTO capacity requirement for all RTOs, do different resource adequacy approaches result in different penalty structures and if so, does this create problems, e.g., opportunities for arbitrage? Note: RTO West and WestConnect are not currently proposing a resource adequacy requirement independent of the requirement for balanced schedules.(Issue X.2).
101		Green	8.3	System Reliability	Resource Adequacy. Resource Adequacy Resolution.				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Many, but not all, of the general seams issues related to scheduling, redispatch, etc., are duplicated between RTO and adjacent non-participants to the extent the latter can and do operate under existing WECC practices. (Issue XI.1).
73		Green	9.0	System Reliability	Market Design - Day Ahead. Model objective function				Modeling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		Who coordinates the scheduling constraints (i.e., security constrained dispatch) on paths that cross RTO boundaries to ensure that inter-RTO schedules do not exceed reliability standards? (Issue I.b.6)
89			9.0	Transmission Service	Market Design - Day Ahead. Release of Unused Transmission Capacity after Close of DA Markets				Fundamental approach -- scheduling issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How are boundary prices to be synchronized between RTO's if only one RTO has a hour ahead process? Is it necessary to align hour ahead markets? (Issue I.c.1)
113			9.0	Energy Market Standardization	Green power attributes trading	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	No	3	
135			9.0	Congestion Management	Historic NNL values should not be reflected indefinitely in the future, and an appropriate mechanism to rationalize the historic flows to recognize eventual market conditions should be developed	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	2	

Seams Issues Matrix

Orig #	Assoc-iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
82		Green	10.0	System Reliability	Market Design - Day Ahead. Ancillary Service Market				Market issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		How does bidding of ancillary services between or among RTOs affect the scheduling and dispatch obligations within the RTOs? Can this kind of trade between RTOs be accommodated? Does trade of these services between RTOs have implications for either the "exporting" or "importing" RTO's ability to meet reliability criteria? (Issue 1.b.15)
103			10.0	Transmission Service	Transmission Service - Market participants require consistent treatment of transmission products across multiple control areas to reduce perceived market risk, scheduling confusion and uncertainty.	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
131			10.0	Energy Market Standardization	Express sunset provisions for implementation of Day 2 markets	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
27.6		Red	10.1	Congestion Management	Congestion - Transmission Allocation	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Delete	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
53			10.2	Congestion Management	CAISO ETC rights scheduling - Contract Reference Number	CAISO Market to Non CAISO market	Non ISO market	CAISO market	Market rule/Business practice/ CAISO software	No	Robert D. Schwermann - SMUD	No		CAISO uses Contract Numbers to track ETC rights. This causes Phantom Congestion and does not allow ETC rights holders to sell and schedule their transmission
99		Green	11.0	System Reliability	Demand Response Participation.				Other issues.	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	No		If there is an RTO capacity requirement for all RTOs, how will double-counting across RTOs be avoided? Note: RTO West and WestConnect are not currently proposing a resource adequacy requirement independent of the requirement for balanced schedules. (Issue X.1).
112			11.0	Transmission Service	Long-term Transmission Service Availability to Support ICAP Transactions - Firm transmission reservation requirements to establish "Deliverability"	Market to Market	PJM	ISO NE, NY ISO	Market Rule / Business Practice	In Northeast Power Markets Seams Action Plan	Jeff Mueller - PSEG	H	3	
139			11.1	Energy Market Standardization	Standard definition of energy products	All	All	All	Business Practice	Yes	Karl Tammar - ISO/RTO Council	No		Energy products and services have common attributes in all markets. Standards definitions will improve efficiencies in communicating and operating between areas with various market designs
10			11.2	Energy Market Standardization	Energy Products	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - WECC	Steven Cobb - SRP	No		Entities have disagreements concerning the definitions of various energy products. Solution: Standardized Energy Products.
34			11.2	Energy Market Standardization	Clarification of Product Definitions	All	All	All	Market Rule / Business Practice	No	Tony Reed - Southern	No		Complete/Standard definitions for Liquidated Damages (LD), "Into", etc.
3			11.3	Energy Market Standardization	Definition & treatment of Firm/nonfirm Power	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No		Annual Plan Item 4ci moved from MOS
25			11.4	Energy Market Standardization	Need for common market and products and definitions	All	All	All	Market Rule / Business Practice	No	Linda Horn - WE Energies	No	1	
27.2		Red	11.5	Energy Market Standardization	Definitions and Procedures	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Delete	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date

Seams Issues Matrix

Orig #	Assoc-iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
117			12.0	Transmission Service	Contract Tie Capacity - One Stop Shopping	All	PJM	MISO	Market Rule / Business Practice	No	Jeff Mueller - PSEG	No	2	
119	Green		12.0	System Reliability	NERC Regional Criteria and Reserve Sharing - define operating policy changes, waivers, or certifications that are needed to permit security-constrained dispatch over multiple existing control areas to allow flows not to be tagged; Joint Reliability Coordination - NERC Policies 5 and 9	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	2	
140			12.0	Energy Market Standardization	Standard messaging protocols for market notifications	All	All	All	Business Practice	No	Karl Tammar - ISO/RTO Council	No		Market participants will benefit from common messaging protocols.
122	Green		13.0	System Reliability	Control area - control zone responsibilities vs. market operator	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
124			13.0	Transmission Service	Wide area dispatch and network resources to network loads - resource deliverability if not a firm network load	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	3	
7			13.1	Energy Market Standardization	Market Price Information	Non-RTO Mkt to Non-RTO Mkt	Non-RTO Market	Non-RTO Market	Market Rule/Business Practice	No	Steven Cobb - SRP	No		Market pricing methodology not comprehensive, consistent or dependable. Solution: Standardized Indices, Independently Managed.
42			13.2	Energy Market Standardization	Data Visibility	All	NYISO	RTO	Market Rule / Business Rule	Yes	Marjorie Perlman - Energy East	No		Inability to view neighboring markets information through a common software such that this sometimes hinders Market Participants ability to complete business in a timely fashion.
14			14.0	Energy Market Standardization	Compensation for Inadvertent Interchange	All	All	All	Market Rule / Business Practice and Physical	Yes / IIPTF	Mark Lively - Lively Utility	A - C	1	Lack of compensation lessens incentives for operators to solve problems. Explicit compensation for inadvertent interchange is necessary for appropriate definition of other products, in that such compensation ensures that the defined product is delivered.
126	Green		14.1	System Reliability	Definition of coordination between market entity (PJM or MISO) and the IDC; define necessary changes to IDC; updates of base cases and book of flowgates	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	1	
134			14.1	Transmission Service	Compensation for parallel flows	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	2	
13			14.2	Transmission Service	Compensation for Unscheduled Flows of Electricity	All	All	All	Market Rule / Business Practice and Physical	Yes / IIPTF	Mark Lively - Lively Utility	A - C	1	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
127	Green		14.2	System Reliability	Industry oversight and reporting of PJM and MISO impact calculations - IDC cost, cost allocation to reimburse NERC	All	PJM	MISO	Market Rule / Business Practice	In PJM/MISO Congestion Management Proposal Whitepaper	Jeff Mueller - PSEG	J	3	
15			14.3	Transmission Service	Compensation for Loop Flow	All	All	All	Market Rule / Business Practice and Physical	Yes / IIPTF	Mark Lively - Lively Utility	A - C	1	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.

Seams Issues Matrix

Orig #	Assoc-iation	Color	#	Category	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Priority	Comments
29	14, 16		14.4	Transmission Service	Allocation of transmission capacity on reciprocal flow gates amounts to transmission service without compensation. Legitimizes "parallel loop flow".	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E		
142	14, 16		14.5	Transmission Service	Pricing for native load loop flow impacts	All	Eastern Inter-connection	Eastern Inter-connection	Business Practice	No	Ed Davis - Entergy	No		
23		Green	15.0	System Reliability	How different congestion management methodologies will interact to ensure parallel flows and impacts are recognized and controlled to ensure system reliability.	All	All	All	Physical	Yes	Linda Horn - WE Energies	No	1	Being reviewed by PJM/MISO.
40			15.0	Transmission Service	Multiple Proxy Buses for Free Flowing Interfaces	All	NYISO	RTO	Market Rule / Business Rule	Yes	Marjorie Perlman - Energy East	No		Development of multiple proxy buses between RTOs for scheduling and pricing.
52	42		15.0	Energy Market Standardization	Confidentiality of Data and Information Shared	All	All	All	Market Rule / Business Practice	Limited	Carl Monroe, Southwest Power Pool	No	?	Standards of Confidentiality would enhance the capability to resolve data sharing and information posting
27.4		Green	16.0	System Reliability	Voltage Operating Procedures	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	2	Being reviewed by PJM/MISO. See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date
141	14, 16		16.0	Transmission Service	Replacement of contract path with flow-based transmission service	All	Eastern Inter-connection	Eastern Inter-connection	Business Practice	No	Ed Davis - Entergy	No		
31		Green	17.0	System Reliability	MISO- PJM will do their own flowgate contribution analysis and send to NERC IDC if the 5% threshold is exceeded for an individual generator. IDC will not have complete information.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E		
5		Green	18.0	System Reliability	Provision of reserves across multiple control areas	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No		Annual Plan Item 4cii moved from MOS

#	Reference Paper or Supporting Document Provided
A	"Profit-Enhancing Seam Management: A White Paper on Pricing The Unscheduled Flows of Electricity Across the Seams Between Utilities Using A Geographically Differentiated Auction of Inadvertent Interchange", released 2001 March 25 (Mark Lively - Lively Utility).
B	"WOLF: Wide Open Load Following," A presentation to the NERC Market Interface Committee, 2002 September 4-5, Houston, Texas (Mark Lively - Lively Utility).
C	E-Mail by Mark Lively to NAESB WEQ Seams Subcommittee of 9/4/2003 8:28:10 PM Eastern Standard Time (Mark Lively - Lively Utility).
D	See the PJM/MISO JOA dated 8/5/03 (Linda Horn - WE Energies).
E	MISO - PJM Managing Congestion to Address Seam Paper, April 28, 2003 (Dave Nick - DTE Energy) (Ed. note: white paper updated Aug. 4, 2003).
F	NERC ?? (Carl Monroe, Southwest Power Pool)
G	Northeast ISOs Seams Resolution Report: History of Seam Issues Resolution (Jan. 15, 2003); and Ongoing Northeast ISOs "Seams" Projects, 2003-2004 (Jan. 14, 2003) (Joe Rossignoli - National Grid).
H	In Northeast Power Markets Seams Action Plan - October 9, 2002 and July 14, 2003, and July 3, 2003 timeline update (Jeff Mueller - PSEG).
I	Attachement A of MISO and PJM Reliability Plans (Jeff Mueller - PSEG).
J	MISO compliance filings in FERC Docket No. EL03-35-004 and in Whitepaper "Managing Congestion to Address Seams" PJM and MISO May 16, 2003 (Jeff Mueller - PSEG).
K	ATC's Attachment K (Jeff Mueller - PSEG).