Northeast ISOs
Seams Resolution Report

History of Seam Issues Resolution

2000

1. **May 2000 – EMERGENCY TRANSFER AGREEMENT WITH PJM** – ensures that energy will flow across control area boundaries during emergency situations

2. **June 2000 - NYISO DATA FEED FOR PJM E-DATA TOOL** – provides zonal and generator LBMP data electronically in a format compatible with PJM's e-Data tool.

3. **August 2000 - EMERGENCY TRANSFER AGREEMENTS WITH ISO-NE** – ensures that energy will flow across control area boundaries during emergency situations

4. **Sept 2000 - GAMING OF TRANSACTION BID PRODUCTION COST GUARANTEES -** by scheduling transactions in NY and canceling them (or not scheduling them) in neighboring control areas, resulting in improper payments in NY and ramping difficulties in PJM. Immediate corrective action taken via ECAs with a permanent fix implemented in the NY market software making this gaming scheme unprofitable.

2001

5. **Jan 2001 – PJM CHANGES TIMING REQUIREMENTS –** PJM implemented new business rules to allow schedule changes with only 20 minutes notice through the Enhanced Energy Scheduling (EES) system.

6. **Feb 2001 - RESERVE SHARING WITH ISO-NE –** Phase 1 allows NY to include 300 MW from ISO-NE as 30-min. reserves (completed in Feb). Phase II (sharing of up to 100MWs of 10-minutes reserves) effective 6/15/01.

7. **March 2001 - TRANSACTION CURTAILMENT –** enhance communication process by improving informational messages when transactions are not scheduled or curtailed.

8. **April 2001 – PJM MODIFIES NYPP-E/NYPP-W LMP DEFINITION –** The NYPP-W and NYPP-E interface points are combined into a single New York Interface point. The two interfaces will continue to be used but the price at these points will be the same and reflect the definition of a single NY interface point.

9. **May 2001 - EMERGENCY TRANSFER AGREEMENT WITH HQ** – ensures that energy will flow across control area boundaries during emergency situations

10. **June 2001 – IMPLEMENTATION OF TRANSACTION SCHEDULING DESK** – NYISO implemented an additional scheduling position in the Control Room that can be directly accessed by market participants to address real-time scheduling questions and problems.

11. **June 2001 – IMPLEMENTATION OF CSS –** PJM implements the Collaborative Scheduling System (CSS) which is part of the EES system. It allows users to submit scheduling information to one place and the information is sent to the NY MIS system for processing.

12. **June 2001 – PJM IMPLEMENTS NY OFFLINE BUSINESS RULES TO HELP CONTROL RAMPING ISSUES –** To help control ongoing ramping problems between NY/PJM schedules, PJM implemented business rules for all hourly (HAM equivalent) NY ISO schedule submissions to be sent to an offline-status. These schedules will only be approved and hold ramp after being checked out hourly with the NY-ISO.

13. **Dec 2001 - MULTI-HOUR BLOCK TRANSACTIONS** - Develop process to accept and schedule external LBMP energy transactions with minimum run times. Allows a marketer to arrange the 5-day by 16-hour market products commonly offered in existing Trading Markets.

2002

Jan 2002 – ISO-NE and NYISO announce agreement providing for the development of a plan to establish a common market design and to evaluate a New England and New York RTO.

14. **Jan 2002 – PJM IMPLEMENTS NYIS INTERFACE LMP –** The NYPP-W and NYPP-E interface points are converted into a single New York Interface point (NYIS).

Jan 2002 - PJM and MISO announce plan to develop a joint and common wholesale market in all or parts of twenty seven (27) Midwest and mid-Atlantic states, the District of Columbia, and the province of Manitoba. This removes the potential for seams over a large portion of the Eastern Interconnection.

15. **Feb 2002 - TRANSACTIONS PRESCHEDULING** - An external LBMP or wheel-through preschedule request may be submitted up to 18 months prior to the effective transaction date. A preschedule request is checked for ramp and ATC before being approved. It is then given economic priority in the scheduling software over other external transactions that are not prescheduled, to provide the greatest certainty that the transaction will flow.

April 2002 - PJM and Allegheny Power System form PJM West -- The larger energy market provides one market with a common transmission tariff, business practices and market tools, thus eliminating seams issues between Allegheny Power and PJM.

16. **May 2002 - ISO-NE CHANGES TO ICAP RULES** - amending procedures for submitting external ICAP transactions between ISO-NE and NYISO. The changes to ISO-NE Market Rule 4 insure that imports from NY to NE will not exceed the TTC of the New York ties.

17. **May 2002 - ISO-NE RULE CHANGES TO PERMIT/FACILITATE SNETS FROM ISO-NE TO NY** – FERC Order dated 4/26/2002; ISO-NE can use all available resources to support short notice external transactions (SNETs) as long as ISO-NE replacement reserves aren't depleted in doing so. The short-notice scheduling capability gives market participants the ability to schedule new transactions on an hourly basis in a manner compatible with the hourly market.

18. **May 2002 - TRANSACTIONS REINSTATEMENT** - for transactions curtailed for in-hour due to reliability violations. NYISO will reinstate external transactions in-hour as soon as the reliability problem is resolved (previously the transaction had to wait until the next hourly BME run).

19. **May 2002 - BME CLOSING TIME CHANGED FROM 90 TO 75 MINUTES** - to allow for closer coordination with ISO-NE, which uses a 75-minute closing time.

20. **May 2002 - INTERIM TRANSACTION CHECKOUT BETWEEN NYISO AND ISO-NE** - This NYISO/ISO-NE Interim Transaction Checkout Tool addresses a seams issue requirement to enhance checkout for summer 2002 until OSS is deployed. It provides an electronic means of sharing transaction information to assist the operators during checkout and identify transaction issues more easily.

21. **May 2002 – IMO SEAMS INITIATIVES** – implemented a procedure that permits staggered HAM closing times – IMO generally closes their market to MP's 2 hours before the hour – a process is in place that will evaluate their accepted NY import/export bids in BME. Also, an interconnection agreement between NYISO and the IMO was made effective on May 1, along with several critical joint control room procedures.

22. **May 2002 - EMERGENCY TRANSFER AGREEMENT WITH IMO** – ensures that energy will flow across control area boundaries during emergency situations

23. **May 2002 – NYISO FILING FOR ICAP DELIVERABILITY TO PJM** – NYISO filed with FERC on May 24 to modify its tariff to provide delivery of ICAP purchased by PJM from NY suppliers, allowing NY generators the opportunity to meet the PJM deliverability requirement and participate in the PJM ICAP market.

24. **June 2002 - DISPLAY TTC/ATC FOR ALL INTERFACES ON NPCC WEBSITE** – provides market participants with a single location to view the most limiting values across neighboring control area interfaces. NPCC has developed a website where regional MP's can view in one location the TTC/ATC values for all regional interfaces. Scheduled for full deployment by the end of this month.

25. **June 2002 – IMPLEMENT PLAN TO ENHANCE CONGESTION MANAGEMENT -** under specific conditions between NY and PJM through control room operating procedures. The pilot provides a means to relieve congestion in western PJM by shifting generation in NYISO.

26. **June 2002 – AREA CONTROL ERROR (ACE) DIVERSITY EXCHANGE INITIAL DEPLOYMENT** - intended to enhance regulation performance. Initial implementation with NYISO and ISO-NE participating; other NPCC Control Areas to participate when IT resources are available. Takes advantage of the diversity among the control areas to reduce the burden on regulating units that should aid regulation performance.

27. **July 2002 – BME / SCD ENHANCEMENTS -** This project implements consistent treatment of reserves in NYISO's hourly and real-time markets which will improve price convergence at the proxy (boundary) transaction busses with the neighboring control areas.

28. **Sept 2002 – INTERCONNECTION AGREEMENT WITH HQ/TE** - In addition, review of potential for increasing the 7040 transmission line import limit above 1500 MW and evaluation of ways to better utilize NY-HQ-ISO-NE DC facilities are scheduled to be addressed by the end of 2002.

29. **Dec 2002 – COORDINATION OF CONTROLLABLE TIE LINES (PHASE-ANGLE REGULATORS) -** for both day-ahead and real-time to support the ultimate FERC ruling on the PSEG-ConEd wheeling contracts. NYISO & PJM will develop procedures to coordinate the setting of the PARS and address same in their respective unit commitment and dispatch programs. Actual implementation within 60 days of FERC order.

2003

30. **1st Quarter 2003 - ISO-NE TO IMPLEMENT SMD 1.0** – Establishes market standards authority, institutes coordinated transmission planning and standardizes transmission tariff provisions. Under SMD 1.0, ISO-NE will implement LMP with day-ahead and real-time balancing markets similar to those utilized in PJM and NYISO.

31. **1st Quarter 2003 – ISO-NE ICAP IMPLEMENTATION** – ISO-NE to implement NYISO-based ICAP market as part of SMD 1.0. New England market will conform to New York product definitions, schedules and auction processes.

32. **2003 – REAL-TIME SCHEDULING (RTS) IMPLEMENTATION** – Real-Time Scheduling (RTS) is a major portion of the overall SMD 2.0 and involves developing new real-time commitment (RTC) and dispatch (RTD) software in place of the current BME and SCD modules. The RTS time frame extends from 5 minutes in the future to 2½ hours in the future. During this period, generating units may be started or shut down, or the output of energy resources may be adjusted. Commitment and decommitment decisions are made every 15 minutes by the real-time commitment (RTC) process. Decisions to adjust the output of internal energy suppliers (dispatch) are made every 5 minutes by the real-time dispatch (RTD) process, as is the calculation of energy and ancillary services prices.

33. **Projected 2003 - REGIONAL ICAP WORKING GROUP** – Set up to address ways to move the various ICAP markets closer in NYISO, PJM and ISO-NE. The goal is to make ICAP tradeable

anywhere in the northeast. There have been five at-large group meetings and several sub-group meetings since December 2001 to develop and present specific proposals. A sixth at-large group meeting will be held in June 2002. Principal proposals coming out of the effort include: Centralized ICAP auctions, ICAP credit for new transmission, a forward market for reserves, and changes required in existing markets to reduce or eliminate existing differences. Final proposals will be submitted in June 2002; at which point the member committees of each ISO will be presented with the results for their consideration.

34. **Projected 2003 - HARMONIZE NEW YORK DEMAND RESPONSE PROGRAMS WITH ISO-NE** – New England currently allows qualified demand response providers to act as reserves and also permits demand response providers to supply real-time demand reduction when prices reach preset levels; they do not have New York's Day-Ahead Demand Response Program or Emergency Demand Response Program equivalents. Proposals are under development to offer all four programs in NYISO and ISO-NE as part of SMD 2.0.

35. **Projected June 2003 - LAKE ERIE EMERGENCY REDISPATCH (LEER) PROJECT IMPLEMENTATION** - The NERC LEER procedure allows the redispatch of suppliers across regions to alleviate the potential curtailments of transactions due to TLR requests whenever a control area is in an energy short situation. The project requires implementation of operating procedures and billing and settlement process to account for the regional redispatch.

36. **Projected 2003 – NEW TRADING HUBS** - Establish trading hubs as requested by market participants to provide locations that would facilitate and enhance trading activity in the New York Market. Detailed project requirements in Reference Document. Working w/ ISO-NE on both.

37. **Projected 2003 - TCC OPTIONS FOR EXTERNAL INTERFACES** – TCC Options on external interfaces will allow parties to hedge congestion on long-term transactions. TCC options differ from TCC obligations in that the TCC holder would not pay the NYISO if the value of a TCC option were negative in any hour.

38. **Projected 2003 – OPEN SCHEDULING SYSTEM (OSS) FOR SEAMS ISSUES –** OSS will be implemented as a "one-stop shopping" tool enabling interregional transactions. Specific seams-issues-related features are:
    - Checkout of transaction failures through OSS Phase II - Define processes that will minimize transaction failures due to missing or mismatched data.
    - Ramping - Allow multiple schedule changes per hour.
    - Transaction scheduling via OSS – Defines a single system for managing inter-ISO transactions and allocating interface transfer capability.
    - ATC/TTC posting via OSS - Coordination and consistency with neighboring control areas is required.

    Initial deliverables will occur in 4Q 2002 including one-stop-shop for external transactions between NYISO-PJM. Additional functionality as described above will be deployed in 2003 to support the NYISO RTS development.

39. **Projected 2003 - ESTABLISH REQUIREMENTS FOR EXTERNAL 30-MIN. RESERVES PARTICIPATION IN NYISO** - 1st draft white paper complete Feb. 2002; added as a discussion Item for the NERTO project. Currently being addressed by NPCC TFCO CO-1 WG.

40. **Projected Dec 2003 - NYISO TO IMPLEMENT SMD 2.0 -** SMD 2.0 builds upon SMD 1.0 as well as the 2003 RTS and OSS projects and incorporates a number of "Best Practice" improvements from New York; includes all key features of FERC SMD.