

Price Error Elimination Team

Summary of Activities

Agenda Item 7
Business Issues Committee
January 4, 2006

Price Error Elimination Team

- ***Team formed to investigate, document, and eliminate (if possible) causes of pricing errors***
 - ✓ *Software enhancements*
 - ✓ *Process improvements*
 - ✓ *Rule-based solutions*
- ***Action Plan Overview***
 - ✓ *Analysis and categorization of price errors, each with a recommendation for an appropriate remedial action*
 - ✓ *High-priority allocation of software resources to correct price calculation issues*
 - ✓ *Initiation of Lean Six Sigma projects targeting internal processes that contribute to pricing errors*

Price Error Elimination Process

- *Team meets regularly to review causes of all recent price corrections*
- *Each specific cause is documented and potential solutions are identified*
- *Solutions are reviewed and prioritized based on frequency, nature of impact, and feasibility to drive a solution*
- *Software development priorities are aligned to address price error elimination solutions quickly*

Price Error Accomplishments

- ***Multiple software enhancements delivered that eliminate causes for price corrections***
 - ✓ Load forecasting software and modeling errors (Feb)
 - ✓ RTD unit ramping logic (Feb)
 - ✓ DNI constraint problem affecting external proxy (Jun)
 - ✓ RTD-CAM commitment of GTs (Jul)
 - ✓ Out of Merit treatment of bid flags (Aug)
 - ✓ Generator operating status issue (Aug)
 - ✓ Load forecasting modeling improvements (Sep)
 - ✓ Islanded Generator Bus modeling anomaly (Oct)
 - ✓ Multiple price posting process improvements (Oct)

Active Price Error Elimination Efforts

- ***Continued improvements to Load Forecaster***
 - ✓ Better alignment between RTD and RTC models
 - ✓ Tuning of system parameters
- ***Enhanced modeling to detect meter failures***
 - ✓ Introduce filters in CIM model to identify load meter anomalies
 - ✓ Provide alerts for initiation of corrective action
- ***Improved transmission constraint pricing***
 - ✓ Avoid inefficient unit dispatch during transmission shortages
 - ✓ Provide appropriate price signals

Planned / Enhancements

- ***Decision Support System (DSS) new data mart***
 - ✓ Product focus shifted to pricing and operational data
 - ✓ Requirements development started; formal project kick-off in January
 - ✓ Design will incorporate price posting requirements as well as enhancement price validation needs
- ***Price validation tools enhancement***
 - ✓ Accelerated scope development started
 - ✓ Requirements being considered include transition to in-house processes, enhanced price reservation / correction rules, and potential 24x7 support

Potential Future Improvements

- ***Tools to supply consistent market data inputs during system down times***
 - ✓ RTS inputs to MIS during market outage
- ***Automated handling of TLR events***
- ***Produce suitable outputs in the event of software not able to produce valid solution***
- ***Enhanced data reporting between market software and price validation processes***
 - ✓ Additional data provided to PV process to speed identification of reservations and corrections

Lean Six Sigma Support

- ***A number of active Lean Six Sigma projects are targeted at improving pricing processes***
 - ✓ Reduce RTD Input Data Errors
 - ✓ Reduce RTS Price Posting Failures
 - ✓ Reduce Ratio of Hours with Price Reservations
 - ✓ Reduce Software Errors in Development
 - ✓ Reduce Incorrect RTS Operator Parameters
- ***All active LSS projects have passed the first tollgate (Define)***
- ***Primary metrics and LSS project progress will be reported as projects progress***

Additional Process Improvements

- ***Improved Quality Assurance testing to include more price validation exercises***
 - ✓ LECG involvement in some testing scenarios
- ***Enhanced impact analysis and identification incorporated into software release planning***
 - ✓ Early identification of proposed changes that may represent pricing error risks
- ***Product planning processes consider price error elimination attributes when recommending project priorities***

Schedule Considerations

- ***Price error elimination activities are part of an on-going process***
 - ✓ Additional priority enhancements may be required based on currently unknown issues
- ***Price validation software enhancements represent a complex estimating challenge***
 - ✓ New processes; in-house transition from LECG
- ***Some potential enhancements may require stakeholder and regulatory approval***
- ***Implementation may be impacted by peak operating conditions***

Preliminary 2006 Timeline

- ***Load forecaster improvements***
 - ✓ Currently being tested; implementation in 1st quarter
- ***Enhanced modeling to detect meter failures***
 - ✓ First phase in test; implementation in 1st quarter
 - ✓ Modeling improvements throughout 2006
- ***Improved transmission constraint pricing***
 - ✓ Stakeholder process not started; regulatory approval would be required
 - ✓ Implementation would be desirable before Summer, but gated by approvals and peak operating conditions

Preliminary 2006 Timeline (Cont.)

- ***Decision Support System (DSS) new data mart***
 - ✓ Project kick-off this month; requirements started
 - ✓ Phased delivery, first phase targeted for end of 2nd quarter; timeline to be finalized following requirements
- ***Price validation tools enhancements***
 - ✓ Accelerated scope process started, will yield a requirements framework and preliminary schedule
 - ✓ Project possibly to be kicked-off in 1st quarter; detailed implementation schedule not feasible yet
- ***Additional future improvements***
 - ✓ Concepts being developed; to be scheduled based on priority and impact assessment

Preliminary 2006 Timeline (Cont.)

1Q 2006	2Q 2006	3Q 2006	4Q 2006
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Load Forecaster Improvements

Testing	Continued Load Forecast Improvements and Tuning		
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Enhanced Modeling and Filtering

Phase 1	Continued Model Improvements, Filtering, and Tuning		
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Improved Transmission Constraint Pricing

Requirements	Regulatory Approval	Implementation Window
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Decision Support Pricing Data Mart

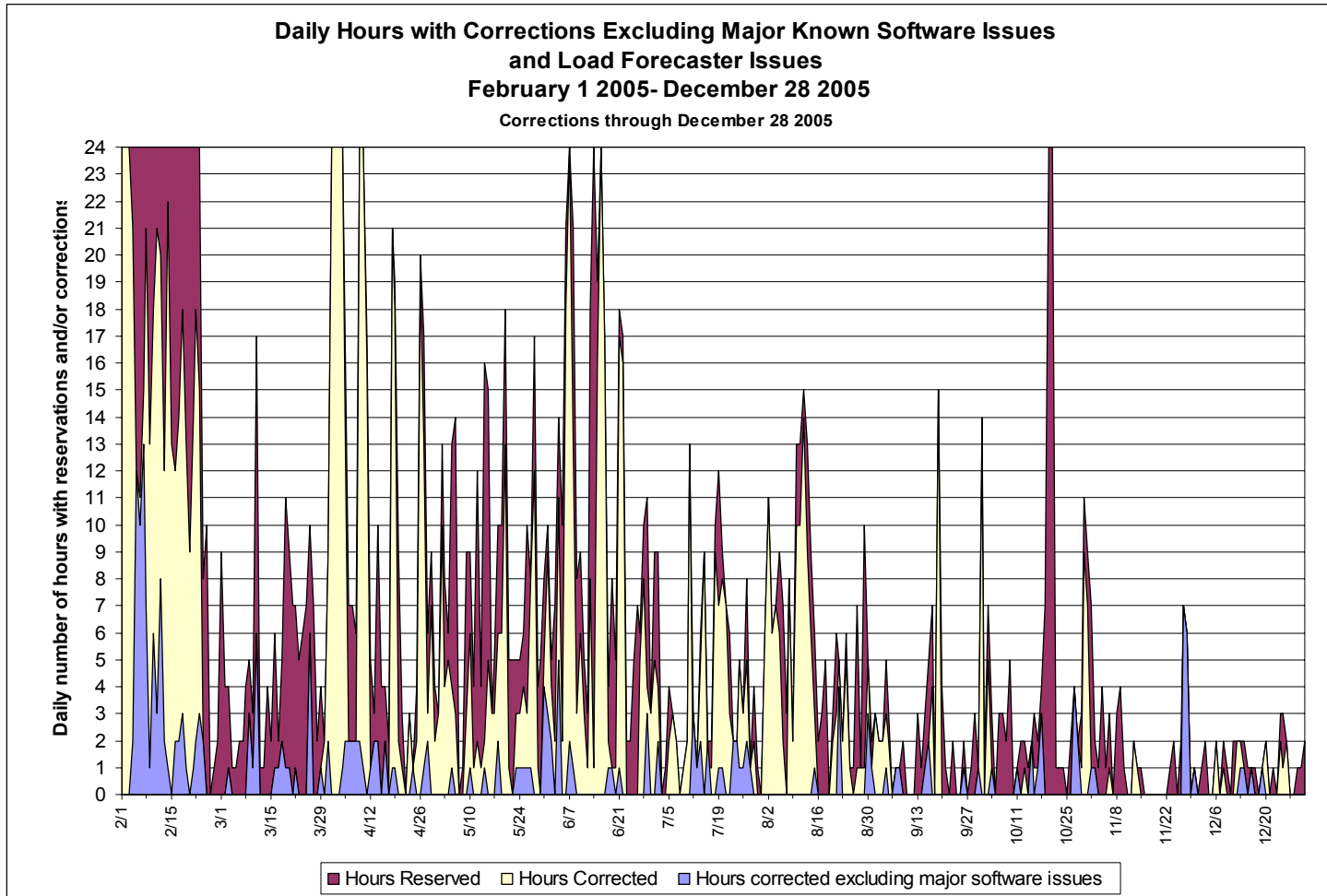
Requirements	Phase 1 Implementation	Phase 2
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Price Validation Tools Enhancement

Concept	Detailed Requirements	Implementation
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Recent Price Correction Statistics



Recent Price Correction Statistics (Cont.)

	2003	2004	2005	2005 Excluding Software / Load Forecaster Issues
January	2.7%	7.9%	3.8%	n/a
February	3.1%	2.6%	57.3%	12.1%
March	3.9%	5.0%	4.6%	3.6%
April	13.3%	4.4%	38.5%	3.5%
May	24.9%	8.2%	16.1%	1.9%
June	6.3%	7.8%	29.7%	2.6%
July	9.3%	6.9%	14.1%	2.8%
August	8.1%	5.6%	17.1%	1.2%
September	4.4%	3.3%	5.3%	1.3%
October	3.0%	4.6%	6.9%	1.9%
November	3.1%	2.2%	1.1%	0.4%
December	3.0%	3.6%	2.3% *	0.8% *
Average	7.1%	5.2%	17.7%	2.9%

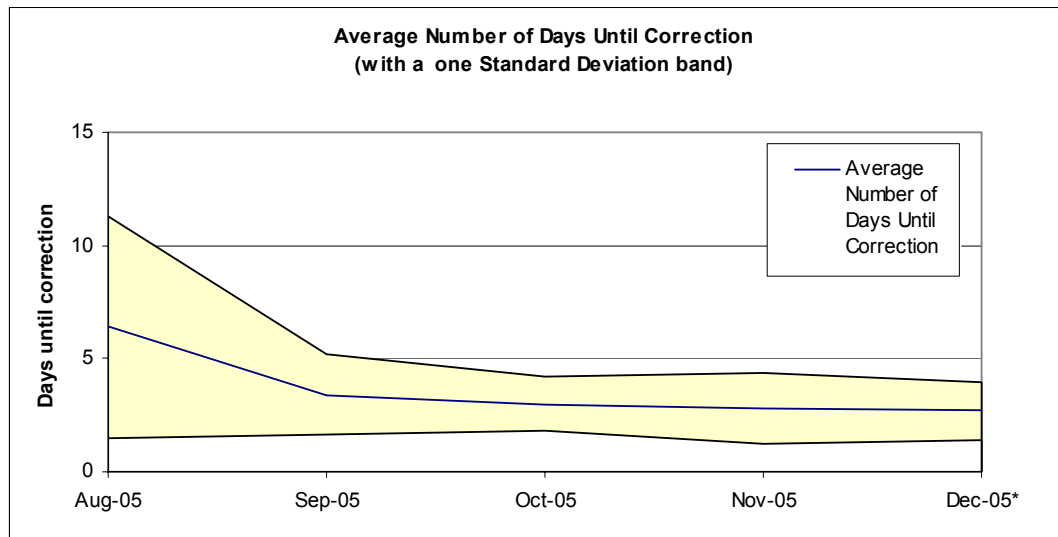
Source for 2003-2005 data: NYISO Monthly Report/Market Operations Report

*December 2005 data through December 28, 2005

Recent Price Correction Statistics (Cont.)

Days Until Correction- Statistics on how long it takes to correct prices

Month	Days Corrected	Average Number of Days Until Correction	Maximum Number of Days to Correction	Minimum Number of Days to Correction	Standard Deviation
Aug-05	25	6.4	14	1	4.9
Sep-05	13	3.4	6	0	1.76
Oct-05	14	3	5	1	1.18
Nov-05	8	2.8	5	1	1.58
Dec-05*	11	2.7	5	1	1.27



Note: Days are counted from the reservation day

*December data through December 28, 2005