

4 Party Seams Agreement

An update on the proposed CMP & M2M Coordination between
IESO/MISO/PJM/NYISO

March 2, 2007



Presentation Overview

1. History of the CMP & M2M
2. CMP & M2M Coordination
3. Update on 4 Party Discussion

History of the CMP

- MISO developed the Congestion Management Process (CMP) because of a reduction in the number of control areas in their footprint
- A mechanism was needed to capture the impact of Market Flows over the seams that disappeared
- Seams disappeared because the number of control areas were reduced
- Another primary seams issues that needed to be resolved was how different congestion management methods (MISO/TLR vs. PJM/LMP) would interact to ensure that parallel flows and impacts get recognized and controlled to ensure reliability
- A CMP between MISO and PJM has been in effect since March 1, 2004

History of the M2M

- After the CMP was established Market to Market (M2M) coordination was introduced to provide the opportunity for one market to request re-dispatch from the other market when that option provided more economic than re-dispatching internally to solve a transmission constraint
- A M2M between MISO and PJM has been in effect since April 1, 2005

CMP Coordination

- A mechanism whereby Market Flow impacts are managed within the existing NERC IDC on a pre-defined set of Coordinated Flowgates (CFs)
- CFs are determined by on-line and off-line studies conducted by each Area
- Examples of CFs are ON-MICH, ON-NY, QFW
- CMP also determines Flow Allocations on a subset of CFs
- Flow Allocations are determined and updated by studies on a schedule agreed to by the Areas involved

CMP Coordination cont'd...

- All Areas use a consistent methodology for determining both Firm and Non-Firm Flows resulting from their Area's dispatch on a set of CFs
- Firm Flows are equivalent to native generation serving native load (i.e., ONT gens serving ONT load)
- Non-Firm are any flows above the Firm amount up to the Market Flow
- When Firm and Non-Firm Flows are known transmission priorities can be assigned and the TLR process can be used to provide relief

M2M Coordination

- Provides the opportunity for one Area to receive a settlement from another Area for providing Reciprocal Coordinated Flowgate (RCF) relief following re-dispatch
- RCFs are a subset of CFs
- Each Area can re-dispatch for reciprocal constraints to the extent that doing so represents the most cost-effective overall solution
- The M2M re-dispatch process can occur prior to or concurrently with a call for TLR3a or higher

M2M Coordination cont'd...

- RCFs are used for both Day-Ahead and Real-Time coordination
- Day-Ahead coordination focuses primarily on ensuring that the Day-Ahead scheduled flows on all RCFs are limited to no more than the Firm Flow Allocations for each Area
- The settlement payment will be calculated based on the hourly Day-Ahead Market results
- If congestion relief is requested and performed on a Day-Ahead basis, then the Real-Time Flow Allocation for the affected hours in the corresponding Real-Time market are adjusted accordingly

M2M Coordination cont'd...

- For Real-Time coordination the Flow Allocations on the RCFs do not impact the physical dispatch
- The Flow Allocations are used in market settlements to ensure appropriate compensation based on comparison of the actual Market Flows to the Flow Allocations
- During Real-Time an automated iterative coordination process is used to exchange data
- Each RCF will be assigned a Monitoring Area

M2M Coordination cont'd...

- In Real-time operations, when any of the RCFs become binding in the Monitoring Area's real-time security constrained economic dispatch, the following will occur:
 1. The Monitoring Area will notify and request the Non-Monitoring Area to maintain its current Market Flow
 2. Both Areas will provide the economic value of the constraint (i.e., shadow prices) as calculated by their respective dispatch models
 3. The Non-Monitoring Area will include the transmission constraint in their security-constrained economic dispatch
 4. The Monitoring Area will evaluate the shadow prices within each Area and request that the Non-Monitoring Area reduce its Market Flow if it can do so more efficiently
 5. The process of evaluating the shadow prices between the Areas will continue until the shadow prices are sufficiently close that an efficient re-dispatch solution is achieved

M2M Coordination cont'd...

- The Market Settlements will be performed based on the Real-Time Market Flow contribution on the RCF from the Non-Monitoring Area as compared to its Flow Allocation:
 1. (Real-Time Market Flow) $>$ Flow Allocation
then Non-Monitoring Area pays the Monitoring Area
 2. (Real-Time Market Flow) $<$ Flow Allocation
then Monitoring Area pays the Non-monitoring Area

Status of Discussions

- IESO/MISO/NYISO & PJM are currently evaluating the possibility of entering into a 4 Party CMP & M2M agreement
- After the IESO is in agreement with the mechanics and the IESO determines there are benefits for both operations and the market, the IESO will have to obtain Stakeholder approval