Joint and Common Market

II. MISO/PJM FTR COORDINATION UPDATE

Background and Status

At the September 20th JCM, MISO and PJM discussed the approach for FTR coordination

- Outage Coordination
  - Both PJM and MISO utilize SDX for opposing RTO outage data
  - Increased coordination efforts implemented to increase confidence in modeled outages
- Timing
  - Timing of auctions vary slightly between RTOs
    - PJM 2014 Monthly FTR Auctions scheduled slightly later than in 2013 to align better with MISO Monthly FTR Auction schedules
    - MISO 2014 Monthly FTR Auction scheduled slightly earlier than in 2013

Next important milestone is to coordinate on modeling of constraints

- For any known or expected system conditions in the FTR auction

FTR Constraints Modeling and Coordination

MISO models temporary constraints to represent known outages and other system conditions

- Includes internal and external constraints
- Successfully allows management of the transmission capacity prior to any temporary flowgates being identified

MISO proposes to share these temporary constraints with PJM with the same objectives noted above

- Obviates, to large extent, the need to exchange outage-related temporary flowgates, which is challenging to know in advance of FTR auctions

MISO and PJM Constraints Modeling Practices

MISO	PJM
Three types of constraints in the FTR auction for layers of monitoring: 1. Temporary constraints (MISO calls these commercial flow constraints) 2. Permanent constraints, include: i. M2M Flowgates ii. Normal and single contingency (N-1) constraints	Three types of constraints in the FTR auction for layers of monitoring: 1. Temporary constraints (PJM calls these generic constraints) 2. Permanent constraints, include: i. M2M Flowgates ii. Normal and single contingency (N-1) constraints
Type 1 represent top binding constraints	Type 1 represent top binding constraints
Type 1 constraints developed and updated annually and monthly; Monthly updates include outage-related temporary constraints	Type 1 constraints developed and updated annually and monthly; PJM outage-related temporary constraints usually not modeled because already captured in normal and N-1. MISO temporary constraints to be added as appropriate.

Facts: Constraint Counts in MISO FTR Models

Constraint Type	2013-14 Annual	October 2013 monthly
Type 1: Temporary (commercial flow) constraints (MISO and non-MISO)	619 (w/external – 249; w/PJM - 150)	495 (w/external – 57; w/PJM – 30)
Type 2: MISO standing flowgates	424	450
Type 2: Non-MISO standing flowgates (PJM, TVA and SPP)	209 (146 of 146 PJM RCFs)	170 (110 of 146 PJM RCFs)
Type 3: MISO (N-1) constraints	~15 M (8400 monitored elements x 1800 contingencies)	~11 M (8500 monitored elements x 1300 contingencies)

Facts: Constraint Counts in PJM FTR Models

Constraint Type	2013-14 Annual	October 2013 monthly
Type 1: Temporary (generic) constraints	~600 (Most already captured from Type 3)	~600 (Most already captured from Type 3)
Type 2: PJM standing flowgates	~150 (Most already captured from Type 3)	~150 (Most already captured from Type 3)
Type 2: Non-PJM standing flowgates	~250 (~240 MISO RCFs)	~260 (~250 MISO RCFs)
Type 3: PJM normal and (N-1) constraints	~8 M (~6000 monitored elements x ~1300 contingencies)	~8 M (~6000 monitored elements x ~1300 contingencies)

FTR Constraint Coordination Milestones

#	St	Activity	By
1		Coordinate outages for FTR auction	June 2013
2		Aligned monthly FTR calendars for 2014 posted	November 2013
3		Standing flowgates – Coordinate and exchange on monthly basis	December 2013
4		Standing flowgates – Coordinate procedure to determine FFEs on other's flowgates and exchange on monthly basis	December 2013
5		Type 1(temporary) constraints – Coordinate procedure and exchange constraints. This set would include outage-related temporary constraints. Ex: MISO's type 1 constraints in NIPS area shared with PJM	Q1 2014
6		Develop monitoring and measuring metrics for items 3–5	Q1 2014
7		Monitoring, measuring and reporting coordination effectiveness of items 3-5	Q2 2014

Current and Proposed Auction Timelines

Activity	MISO Current (of each month)	MISO Proposed	PJM Current (of each month)	PJM 2014
Auction model posting	~ 5th	~5th	Outages~7th	Outages~10th
Outages snapshot	~4th and again on ~ 15th	~4th and again on the 13th	1st week	~2nd week
Bidding window	~15th for 2 days	~ 13th for 2 days	~11th for 3 days	~14th for 3 days
Auction results posting	~28th	~28th	~ 21st	~26th

By moving the bidding windows (MISO forward, PJM backward), Outage snapshots can be better aligned.

Next Steps

Activity 1 and 2 in progress

Activity 3 and 4 key steps – ensuring that one RTO is modeling and managing the flows on other RTO's standing flowgates within FFE range

- Requires developing and standardizing procedures to determine FFE range
  - FFE is hourly value – FTR markets require monthly, seasonal or annual values