



MISO PJM IPSAC

February 5, 2016

- Annual Issues Review
- Michigan Interface Study Initial Results
 - N-1
 - Generator Deliverability
- Quad Cities Analysis Update
- Metrics & Process
 - Review existing criteria/process
 - Priorities
- Process Schedule for 2016

- The JRPC conducted the Annual Issues Review of 2015 regional planning
 - Review 2015 issues
 - Provide comment and input for April 8 IPSAC (March 8 deadline)
 - Review 2016 issues September 2 IPSAC and December IPSAC
 - 2016 coordinated targeted reviews
 - 2016 joint case development for potential 2017 analysis
- 2016 - PJM & MISO provide ongoing information to IPSAC of regional issues

Targeted Study Process

- February 5, 2016 – Notice of April issues review
- March 7, 2016 – IPSAC & stakeholder input to issues review due
- April 8, 2016 – IPSAC issues review

2 Year Market Efficiency Cycle

- July 26, 2016 – IPSAC & notice of September PJM issues review
- August 26, 2016 – IPSAC stakeholder input to PJM issues review due
- September 30, 2016 – IPSAC review PJM issues
- November 1, 2016 – PJM long-term solution proposal window opens
- October 2016 – IPSAC & notice of December MISO issues review
- November 2016 – IPSAC & stakeholder input to MISO issues review due
- December 2016 - IPSAC review MISO issues
- February 28 – PJM long-term solution proposal window closes
- January – March 2017 – MISO solution proposals accepted

Michigan Interface Study Reliability Results

- Identify causes of significant historical congestion on MI Interface
 - Cook - Palisades
 - Benton Harbor – Palisades
 - Michigan City – LaPorte
- Evaluate how future configuration & interconnection changes impact congestion
- Develop and evaluate solutions as required



- Coordinated PROMOD models were developed by PJM and MISO
- Both models showed little to no future congestion on Palisades area facilities
- Sensitivity analysis shows two major drivers for this are:
 - Reduced Michigan imports (Michigan imports reduced in fall 2014, and reversed in 2015)
 - The Covert unit will join the PJM market June 1, 2016. Segreto station (interconnection facility) changes electrical topology
- Michigan City area congestion (primarily 138kV facilities) is expected to be an ongoing issue

- N-1 Analysis: Complete
- Gen Deliv – Michigan area units to PJM: Complete
- Gen Deliv – Michigan area units to MISO: Reviewing Results

Will report full results at the next IPSAC

Quad Cities Analysis Update

- Jointly evaluate reliability drivers
 - Determine limiting element up to conductor limits
- Consider opportunity for interregional reliability upgrade, which could displace regional reliability projects
 - 3 MTEP15 Appendix B projects in Quad Cities (P8842-4)
- Reliability issues must be resolved before considering cross border market efficiency issues

- Flows in joint MISO-PJM powerflow do not match MTEP14/15 models
- Will SCED model to get economic based dispatch
- Reliability analysis will be performed when SCED is completed
- Will work to reconcile MISO and PJM planning case flows to more closely approximate operations

Metric and Process

- Metric enhancement and simplification will use, as a starting point, the Regional identification and approval processes
- Cost and voltage thresholds should be reduced or eliminated
- Simplification of metrics is desirable
- Reconsider congestion hedging assumptions
- Conduct evaluations on shorter time horizon (10 years)
- Better define Targeted study process and approvals
- Expand benchmarking and stakeholder review process
- Clarify process timeline

Stakeholder comments from previous discussions are posted

- Enhance & streamline process for Targeted studies (such as “quick hit”)
 - Study process, approval, and benefit determination
- Further simplify thresholds
- Changes to MEP metrics
- Changes to MEP congestion hedging assumptions

- RTO's see value in Targeted studies
 - Conducting study again this year
 - Goal is to produce actionable results
- Want more efficient process for project approval and benefit determination
 - For Targeted studies avoid time for single model development for multiple study years and complex benefit calculations
 - Benefit determination should be consistent with share of total historical congestion cost
- Targeted project scope is limited by time to in-service

- New project type established in JOA to efficiently address historical congestion issues
- Short lead time projects focus
- Inter-RTO benefit determination based on share of total historical congestion
- Single interregional approval process by JRPC
 - Still requires board approvals, but no separate regional analyses
- RTOs working out proposal details

- \$20 Million Threshold
 - RTOs filed in December 2015 to remove cost threshold language from JOA
- 345kV Voltage Threshold
 - MISO regional issue
 - Issues is being prioritized by MISO stakeholders
 - Should have a better understanding of timeline for this item later in February

- Consider removal of interregional 1.25 B/C
 - Replace with JRPC recommended screening tools
 - Use interregional process to determine each regions benefits

- Current hedging assumptions may diminish benefits of some projects
- PJM and MISO are open to a variety of changes to the benefit calculation, consistent with:
 - Requirement to simplify calculations
 - Metrics that can be more easily reproduced

IPSAC Work Schedule



Q1 2016

- Provide summary of annual issues review to stakeholders
 - Opportunity for stakeholder comments on issues review
 - Timing reviewed in previous slides
- Complete Michigan Interface reliability analysis
- Complete Quad Cities analysis
- Identification of facilities for 2016 Quick Hit study
- Development of “As-Is” models for quick hit analysis
- Progress on Metrics & Process to address targeted studies



Q2 2016

- Conduct evaluations of potential Targeted upgrades
- Make progress on MEP Metric and Process discussions with stakeholders

Q3/Q4 2016

- Complete Targeted analysis and recommend projects as appropriate
- Conclude targeted Metrics & Process review and implement changes
- Identify potential interregional issues from regional processes; solicit projects from stakeholders

See timeline attached to September 28 IPSAC meeting for complete two year evaluation cycle

Open Discussion

- Chuck Liebold
chuck.liebold@pjm.com
- Adam Solomon
asolomon@misoenergy.org