

Revenue Adequacy Trends

May 10, 2013

Objectives

- Review of Congestion Drivers
 - Increased M2M Congestion
 - Increased M2M Flowgates
- Revenue Adequacy Drivers
- MISO/PJM Open Work Items

Congestion Drivers

- MISO agrees that there has been an increase in M2M congestion in recent years
 - Increase transmission utilization leads to realized benefits to customers (load) but with a requirement to manage increased congestion
 - Drivers for congestion:
 - Historical West to East bias – Increase with integration of CE into PJM
 - Significant change in operational factors associated with renewable integration has increased this West to East bias
 - Outages & NERC alert facility rating requirements

Congestion Drivers

- MISO agrees that number of M2M Flowgates has increased in recent years
 - Required per MISO/PJM 2011 settlement agreement:
 - Eliminate use proxy FGs – required to predict exact monitored and contingent element that will be bound
 - Addition of pre-positioning FGs to accommodate coordinated dispatch on FGs impacted by outages
 - Number of FGs created versus number of FGs utilized
 - Given no proxy requirement and timing to add FGs, a range of operating factors must be considered in the planning/activation of temporary M2M FGs
 - Other factors:
 - Increase in MISO/PJM wind resources (localized congestion on the seam)
 - Topology changes (i.e.. NERC alert facility rating requirements)

MISO - Revenue Adequacy Drivers

- MISO believes that M2M congestion and associated revenue adequacy can be managed under current rules
- Revenue Inadequacy results because of modeling differences between FTR, Day Ahead, and Real Time markets
 - Flow differences between markets are due to:
 - Topology Differences (planned vs. actual outages)
 - Constraint modeling (Limits, monitored elements, FFEs)
 - Loop flow modeling/assumption differences
- MISO's Revenue Adequacy has maintained high degree of funding even as # of M2M flowgates/congestion has increased
 - Forward markets strive to converge with the real-time market
 - High level of communication and coordination between the FTR, DA, and RT groups is required
 - Analysis to determine drivers and support process improvement

PJM's - Revenue Adequacy Drivers

- Per PJM FTR Revenue Stakeholder Report there are multiple drivers for revenue adequacy issues
 - ARR Stage 1a tariff requirement to allocate rights on infeasible constraints in ARR allocation
 - Improve RT Balancing Congestion shortfalls – ***MISO/PJM working to Improve Coordination***
 - NERC alert facility rating requirements – ***Impacting MISO/PJM***
 - Increase utilization of M2M – ***Per MISO/PJM JOA agreement and operational factors***
 - MISO Outage Coordination timing requirements - ***MISO agrees to work with PJM***
 - Pursuing modification requiring submission of such planned outages further in advance