Electric Transmission Seams: A Primer

NRRI Colloquium - February 14, 2015

Rishi Garg
General Counsel and Principal Researcher
National Regulatory Research Institute
8611 Second Avenue, Suite 2C
Silver Spring, MD 20910
Tel: 301-588-5385
Web: www.nrri.org
Email: rgarg@nrri.org

Summary

- Contract paths cannot be enforced because electricity flows over power lines pursuant to the laws of physics.
- Issues emerge at the boundaries between RTOs and ISOs when flows intended to serve once region end up flowing through an adjacent region with potentially adverse impacts.
- In some cases, the adjacent region seeks compensation for use of its transmission assets.
- In addition, activity in the adjacent region may cause a need for transmission system upgrades to alleviate the interregional congestion issues, and it is unclear who should pay for the needed upgrades.

Definition(s)

Inefficiencies that prevent the economic transfer of capacity and energy between neighboring markets or control areas.

Due to differences in market rules and designs, operating and scheduling protocols or other control area practices

Wholesale electricity markets have evolved using different sets of rules and procedures

Examples

- Rate Pancaking
- Parallel Flows
- Capacity Deliverability
- Available Transfer Capability
- Interregional Cost Allocation

Contested Cases

- Southwest Power Pool, Inc., Submission of Unexecuted Non-Firm Point-to-Point Transmission Service Agreement, FERC Docket No. ER14-1174
- Northern Indiana Public Service Co., Complaint re: PJM/MISO interregional transmission lines, FERC Docket No EL13-88-000
- Lake Erie Loop Flow Phase Angle Regulator Solution, FERC Docket No. ER11-1184

Unilateral Service Agreement

- SPP alleged unauthorized use of SPP transmission assets to accommodate energy transfers to/from new Entergy region
- Incremental power flows have crossed SPP's system without reservation, agreement or compensation
- Dispute over JOA (Section 5.2 – DC Court of Appeals vacated FERC Order)
- Unreserved Use Penalties – FERC Orders 888 and 890
- Lop Flow Concerns
- Louisiana Public Service Commission – approved Entergy membership in MISO based upon cost analysis
- Missouri Public Service Commission – renegotiate JOA in light of material changes in circumstances; uncertainty, otherwise parochial planning and unfair cost allocations may persist.

Interregional Transmission

- NIPSCO filed complaint alleging flaws in interregional planning process contained with in PJM-MISO JOA
- Not one single interregional project has been approved under the JOA and this failure has led to unnecessary congestion costs and unreasonable rates
- Proposed six reforms: concurrent planning; consistent planning analyses; analysis of cross border market efficiency projects (CBMEPs); joint planning of lower-voltage cross border projects
- PJM/MISO response: joint – RTO planning processes (IPSAC); Joint Planning Study; holistic planning process; Order 1000 interregional process
- December 2014, FERC partially accepted Order 1000 interregional compliance filing; one same day, directed staff to convene technical conference to explore issues raised in NIPSCO complaint

Loop Flow Fix - Cost Allocation

- MISO and ITC proposed tariff to recover costs of phase angle regulating transformers (PAR) along Michigan-Ontario border among MISO, New York ISO and PJM
- Loop flow is the difference between the scheduled and actual flow on a path or interface.
- Scheduling of significant volumes of external transactions via circuitous paths around Lake Erie (avoid higher prices at NY/PJM border) exacerbated loop flows
- Attempt to assign costs based upon each region's contribution to the loop flow problem; regional physical solution
- Michigan PSC supported the project but others opposed arguing that it unilaterally imposed costs on others for a local solution
- Trial judge ruled against MISO/ITC on cost allocation methodology; preclusion by JOA of allocation; burden of proof; *Mobile-Sierra*

Takeaways

- When is it appropriate for the FERC or a state regulator to intervene in an interregional dispute and order a solution?
- When it is appropriate for a regulator to remain in a facilitation or information-gathering rile in the interest of a global and agreed-upon settlement?
- How long should an aggrieved party rely upon interregional stakeholder processes to resolve an alleged harm and then should it take unilateral action forcing the regulator to make a decision?