Loop Flow Study Phase II
Joint and Common Market Initiative

Joint Stakeholder Meeting
October 5, 2007

Loop Flow Study Phase I – Background and Purpose

- Loop flows were increasing in the 2005 to 2006 timeframe
  - 1,000 MW (about 200%) on the TVA-PJM and MECS-PJM interfaces
  - 500 MW (about 100%) on the NY-PJM interface
  - 600 MW (about 60%) on the Michigan-Ontario interface

- On June 28, 2006, the Midwest ISO and PJM included a new Joint and Common Market (JCM) initiative to investigate loop flows across the combined Midwest ISO and PJM footprint

- Purpose
  - Increase the understanding of the impact that all entities have on the creation of loop flows
  - Provide details on plans and actions to address the reliability problems associated with loop flows

Midwest ISO and PJM Meeting with FERC Staff

- Midwest ISO and PJM representatives met with the FERC Staff on September 5, 2007, to present the JCM Loop Flow Study results. Key points from the presentation are as follows:
  - Loop flow is a reliability problem, not merely an economic one
  - Push the industry to require all Balancing Authorities (BAs) provide real-time generation-to-load impacts along with point-to-point impacts to the IDC on an hourly basis
  - Require NERC/NAESB to change the IDC to reduce its sensitivity factor cutoff below the current 5% threshold to improve the short-term ability for TLR to manage loop flows
  - Require other ISOs and RTOs who operate LMP-based markets in the Eastern Interconnection to implement interregional congestion management protocols based on the Midwest ISO/PJM process
  - Require NERC/NAESB to develop a more reliable approach to congestion management beyond the current practice of curtailing point-to-point transactions through TLR. The new approach should also provide more economic solutions.

Recommendations for Congestion Management Process Enhancements

- All entities should calculate and post to the IDC, at least each hour, all generation-to-load impacts on transmission facilities
  - The Midwest ISO and PJM currently post this information to the IDC every 15 minutes
  - These flows are curtailable via the TLR process
  - All Midwest ISO and PJM impacts down to 0% are included in this calculation
  - The TLR process only considers transmission service impacts across BA boundaries greater than 5% and no generation-to-load impacts
- An interconnection-wide Congestion Management Process should include real-time calculation and accounting for generation-to-load impacts by all neighboring entities
- Reliability Coordinators need greater transaction tag visibility on a real-time basis through a more open interregional data exchange process
  - BA-to-BA energy tags
  - Generation-to-Load flows

Additional Recommendations

- IESO and NYISO should adopt a Congestion Management Process whereby they report their market flows to the IDC and participate with Midwest ISO and PJM to manage circulation flows around Lake Erie when congestion occurs

- An Energy Schedule Tag Database Archive that contains tag impacts, market flow impacts, and generation-to-load impacts for all flowgates in the IDC should be created such that this data is readily available to all reliability entities

Loop Flow Study Phase I – Follow-up

- Phase I Study Follow-Up
  - Have received written comments on the Phase 1 study report from ITC. Will confirm that IESO, NYISO and TVA do not intend to submit written comments.
  - Met with FERC staff on September 5, 2007 to provide them an overview of the Loop Flow Study Phase I report. Will contact FERC staff whether they need additional information beyond what was presented at the September 5, 2007 meeting.
  - Develop appropriate action items based on recommendations from the Loop Flow Phase I Study report. These action items will be tracked and progress will be reported to the JCM Stakeholders.

Loop Flow Study Phase II Proposal Summary

- Go to the next level of granularity on the Midwest ISO/PJM loop flow study.
- Analyze flowgates internal to Midwest ISO and PJM markets as well as flowgates on the border between Midwest ISO and PJM and between the two RTOs and outside entities.
- Identify flowgates located within the two markets that have experienced congestion during the last two years.
- Analysis will examine data for specific dates and times when these flowgates experienced high flows and will identify the contributors to these high flows.

Loop Flow Study Phase II Proposal Summary

- Flowgates to be considered have a history of:
  - Significant Transmission Congestion
  - Significant Market-to-Market flows
  - High number and/or duration of TLR implementation

- Midwest ISO and PJM will perform study in coordination with other Reliability Coordinators and Transmission Owners impacted by loop flows
  - Periodic reports will be made to the JCM Stakeholders

- Develop additional mitigation strategies to better manage loop flows in real-time operations
  - Develop the ability to predict loop flows based on system conditions

Loop Flow Study Phase II

Milestone Summary

G	Define Scope
G	Develop Project Plan

G **Overall Status**

JCM Lead

- Midwest ISO: T. Mallinger
- PJM: S. Williams

Legend

C	Completed
G	On Target – No Issues
Y	Need to watch – Some Issues
R	In Jeopardy – Significant Issues

KEY ACCOMPLISHMENTS

- Developed Loop Flow Study Phase II Scope Document.
- Tag data for IESO, Midwest ISO, NYISO, PJM and TVA was obtained for Phase I study.

UPCOMING ACTIVITIES

- Review Loop Flow Phase II scope with JCM Stakeholders
- Develop project plan.
- Initiate discussion on receiving updates to the tag data base on previously executed confidentiality agreements.

ISSUES & CONCERNS

- None at this time.

Benefits

- Enhanced Situational Awareness - Will provide Reliability Coordinators with real-time information on the sources of loop flow over a wider area
- Enhanced Reliability - Will enable a more reliable approach to managing transmission congestion than is possible with the current TLR approach
- Enhanced Economics – Will not only ensure a solution to resolve congestion is always achieved but will also ensure that the most economical solution is also achieved