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ITC comments on MISO/PJM Loopflow Study

ITC*Transmission* and Michigan Electric Transmission Company (referred to jointly herein as ITC) commend Midwest ISO (MISO) and PJM for producing this joint study analyzing loop flow in the Midwestern and Eastern Interconnects. This study was undertaken to determine the causes of unscheduled flow in portions of the Eastern Interconnection. ITC believes this type of analysis is critical to understand how market and non-market conditions cause loop flows in the bulk electric system that can impact congestion and reliability between interconnected transmission systems. The study serves as a first step in identifying solutions, but ITC recommends adoption of an interregional congestion management process that would include IESO, PJM, MISO and NYISO as a next step to address the issues identified in the study.

The portion of the study related to Lake Erie loop flow is particularly relevant to ITC. Lake Erie loop flow includes unscheduled flow across the interconnections between ITC and Hydro One (Michigan-Ontario). It has been an operating concern and a contributing cause of transmission loading relief (TLR) events and market congestion in both MISO and IESO areas. The study observation that Lake Erie loop flow has increased by more than 600MW over the 2005-2006 period indicates this challenge is increasing and bears further scrutiny and a workable remedy.

A major recommendation of the report, to use the ITC*Transmission*-Hydro One Phase Angle Regulators (PARs) to control Lake Erie circulation, is a significant proposal for controlling this loop flow but is not the only option, nor is it a complete solution. The study notes that the NYISO-PJM PARs, while operating under current agreements, can adversely impact Lake Erie circulation -- particularly counterclockwise flow from Ontario to Michigan. As a result, ITC urges MISO and PJM to consider mandatory adoption of a plan to utilize the NYISO-PJM PARs to mitigate loop flow before the ITC*Transmission*-Hydro One PARs are placed in service to regulate flow. (Study recommendation, page 42: *The four parties will develop a comprehensive plan on the operation of the Michigan-Ontario and NYISO/PJM PARs to control loop flows around Lake Erie*")

While not part of this report's scope, it is important to note that the use of the PARs between Michigan and Ontario is intended to benefit the customers in the service territories of Michigan and Ontario. Among these benefits:

- When flow is held to schedule, ITC*Transmission* and Hydro One customers should not be curtailed during TLR procedures on other flowgates in the Eastern Interconnection.
- Assumptions employed during FTR feasibility studies regarding the Michigan-Ontario PARs should be directed at granting FTRs to Michigan and Ontario customers.

In addition, MISO and PJM should ask NERC to include calculation of the impact of the PARs on IDC calculation of flows. Currently, PARs are either modeled as “block loaded” (regulation modeled as open-circuit model) or “free flowing” (in service without regulation). While this is useful, it does not capture all of the impacts of PAR operation on interconnection flows. For example, it is possible to calculate (in the IDC) the MW flow change impact on the Michigan-Ontario interface as a result of the Branchburg-Ramapo PAR settings (change in angle from neutral tap). If a PAR is not controlling flow to schedule, it can contribute to congestion elsewhere.

ITC agrees with the study recommendation that the IESO and NYISO should send market flow calculations to the IDC as MISO and PJM currently do. If the IESO and NYISO are able to call a TLR when their flowgates are impacted, they should be obligated to ensure that the IDC is as accurate as possible.

Summary

While ITC believes this report provides significant analytics with respect to flow patterns, its final conclusions fall short of an actionable plan to control or reduce loop flow. Report recommendations do not adequately address the unscheduled and unmanaged power flows that are being created on the MISO flowgates by other control areas’ generation-to-load transfers and by external contract-path schedules. Additionally, the control-area-to-control-area transactions that are managed through the NERC tagging process are not being controlled if their power distribution factor on the impacted flowgate is below 5 percent.

The parties that cause and create the majority of the flows have only committed to a further review of the problem with no proposed solutions. Loop flow is a substantial challenge that impacts transmission system reliability and energy market economics. The bulk electric system can only be operated efficiently and reliably when all flows are properly accounted for based on the physical characteristics of the grid.

These unscheduled flows will continue to pose operational challenges unless MISO and PJM implement a comprehensive plan to operate the ITC*Transmission*-Hydro One and NYISO PARs to control flows and simultaneously adopt an interregional congestion management process.