Introduction to SE-109

Outage Management Redesign

Background

The existing IESO outage management process was designed for participants to submit outage information and allow the IESO to assess the power system so as to fulfill its reliability obligations. Several issues involving confidentiality, outage coordination, outage compensation, conflict resolution and submission-approval timelines were considered in developing the framework used today.

In 2003, the IESO established an outage planning subcommittee whose aim was to address problems and opportunities to help the outage process evolve as the power system evolved. Recommendations included extending the advance approval date, categorizing equipment based on relative impact, introducing coordination rules, classifying "non-discretionary" outages and maintaining timestamp precedence upon outage rejection. In December of 2005 the market rules were amended to give participants the opportunity to request 14 day advance approval for outages of particular significance. The remaining recommendations were planned to be incorporated as part of a future IESO outage management software replacement.

Ontario has seen many changes with respect to supply mix, surplus generation, transmission expansion and elevated reliability requirements. Moving forward these changes are expected to overlap with a decade's worth of nuclear refurbishments that impact supply adequacy, identifying the need to revisit the way in which outages are planned and assessed. More recently, the IESO identified the need to address the increasing reliability concerns related to limited assessment times for two-day ahead and short-notice outage requests as well as gaps in outage coordination between the IESO, its participants and its interconnections.

Participants continue to provide recommendations for improving the outage process. Coupling these recommendations with a need to replace aging IESO software applications presents an ideal opportunity to engage stakeholders in developing an improved process that will satisfy market participant's objective while at the same time allowing the IESO to fulfill its reliability obligations.

Overview of Design Scope

The existing outage management process spans three time horizons – Long Term (18 months), Near-Term (33 days), and Real-Time. Each timeframe focuses on providing participants with an assessment of resource adequacy, system security and overall operability of the outage plan. The process redesign will consider the near-term and long-term timeframes and address the submission, assessment and reporting of outages with respect to their impact on adequacy, security and operability.

Overview of Design Objectives

The core objectives of this initiative are:

1. Reduce the risk of reliability standards' violations and near violations associated with the outage management related processes.

2. Improve outage management related services for market participants.

3. Maximize the efficiency and effectiveness of IESO and participant activities that support outage management.

4. Replace the IESO outage management solution

Overview of Proposed Design Principles

1. Framework designs will incent market participants to plan and commit outages further in advance.

The existing process uses time-stamp precedence as an incentive for participants to submit their outages further in advance. A longer-term approval process that overlaps another in the near-term may require new methods for driving this behaviour. For example, ISO New England uses a framework that gives priority to outages firmed up in the long-term over those that are firmed up in the near term even if the near-term outages were submitted first.

2. Framework designs will provide better opportunities for market participants to coordinate their outages and avoid conflicts further in advance.

Transmission, generation and customer-load outages can have a significant impact on participants that are not directly connected to the facilities being planned out-of-service. The outage plan may not proceed if these broader impacts are not be communicated to affected participants far enough in advance. Providing participants with impact information and coordination advice further in advance should optimize the outage plan (i.e. timing and frequency of outages).

3. Framework designs will give market participants outage scheduling flexibility in a non-discriminatory manner.

The power system is dynamic and unforeseen circumstances require both participants and the IESO to respond in an appropriate and timely manner. Redesigns will allow for flexibility in scheduling or rescheduling of outages that have little to no impact on reliability. This flexibility will be available to all participants.

4. **Framework designs will allow sufficient time for the IESO to conduct outage assessments once outages are committed by market participants.**

The three-day confirmation to two-day approval window does not allow sufficient time for the IESO to conduct its assessments for all planned outages in a reliable and efficient manner. Extending the time between outage confirmation and approval is essential for the IESO to maintain its reliability obligations to NERC and NPCC. Redesign will consider the fact that higher impact outages require more time to assess than lower impact outages.

5. **Short notice outage requests must satisfy emergent or immediate ICG benefit criteria in order to be assessed.**

Reliability is the only driver for this design principle. Short notice requests should not be allowed on a best effort basis as their impacts are difficult to determine within a few hours or days, even if they seem trivial on the surface. As outlined in the third design principle, framework designs should allow sufficient flexibility for outages to be submitted based on a predetermined, relative-impact basis. Any outage requests beyond these timelines should only be reserved in unavoidable circumstances or if there is a net benefit to the grid and that benefit can be realized without an assessment. These criteria will be clearly defined.

6. **Framework designs will continue to address outage conflict resolution and cost recovery mechanisms for outages recalled or revoked by the IESO.**

The IESO will work with stakeholders in examining whether the existing mechanisms for conflict resolution and cost recovery are appropriate under a revised outage management process. Reference to the ISO New England example associated with the first design principle can also be applied here.