

# Outage Management Redesign Consultation Process (SE-109)

July 3, 2014



- IESO Response to Stakeholder Feedback
  - **Stakeholder feedback in bold**
    - *IESO response in italics*
- Software Design Updates
  - 1 Day Advance Approval Criteria Software Validation
  - Modifications to Auto Advance Approval
  - Proposal for Final Approval in Advance
  - Conflict Checking Validation
- Proposed Data Migration Strategy
- Next Steps

- **No concerns with the proposed model, however existing equipment lists should be retained in the new system**
  - *ONLORF users will see a slight modification to their reporting lists due to equipment class nomenclature changes*
  - *Further discussions with API user organizations required to determine equipment transition requirements*
  - *Proposed equipment model is considered final and will be incorporated into the software design document*

- **No concerns provided the method is not mandatory**
  - *Not mandatory, however not utilizing the method will preclude participants from automatic advanced approval and in some cases, the 1 day advance approval process*
  - *Using “other miscellaneous equipment” to report primary protection, breaker failure protection, automatic voltage regulator or power system stabilizer outages would only be eligible for 1 day advance approval if the loss of redundancy and  $\leq 15$  min recall criteria is satisfied.*

- **Provide clarification on constraint and purpose codes**
  - *Any constraint code can be used in combination with any priority code*
  - *Single outage requests will be able to have multiple sequential constraint codes*
  - *The “Other” purpose code will be available to any constraint code*
- **Consider including “Test” as a priority code**
  - *“Test” will not be incorporated as it is better suited as a purpose code or description of the work being performed*
- **Consider including “Must Run” as a constraint code**
  - *IESO agrees that a “Must Run” constraint code would more clearly identify the participant’s intentions during the outage request*
  - *IESO will include this code provided that the impact is identical to the impact of the “Derate” constraint code*

- **The proposal will require training so that participants are able to determine what outages meet the Auto Advance Approval criteria**
  - *Process and software training will be scheduled as part of the implementation plan*
  - *IESO considers the proposed mechanism final, however has one clarification to discuss regarding AC or DC Station Service equipment (next section)*

- **Elimination of the 1 Day AA process for non-critical facilities is not acceptable.**
  - *IESO will incorporate the 1 Day AA process into the vendor software using a combination of modelling facilities by impact (i.e. facility class) and incorporating new code to ignore default lead time rules when the outage satisfies 1 Day AA criteria.*
    - *Exception: Generation facility plant auxiliaries that affect more than a single generator where the loss of an additional element results in multiple unit shutdowns within 48 hours.*
    - *This would be reported under “other miscellaneous equipment”*
  - *Any equipment reported under “other miscellaneous equipment” would be eligible for 1 Day AA if the outage represents LOR and  $\leq 15$  min recall*

- **Consider the addition of a “Parked” state (Hydro One)**
  - *The proposed “Draft” outage state could be used by Hydro One to mimic their “Parked” state.*
  - *The state transition will be updated to reflect changes to the Draft state that align with Hydro One’s “Parked” state.*
- **Consider displaying more participant outage information.**
  - *The vendor software will allow participants to retrieve and view outage requests submitted by other 3<sup>rd</sup> party participants.*
- **The new process and tool should not limit outage extensions**
  - *The ability to extend any “in Progress” outage priority in a similar manner as today will be incorporated into the vendor software.*
    - *Forced Extensions: Changing the end time of a Planned “In Progress” outage will change the outage to a Forced Extended priority code*
    - *Planned extensions will have to be submitted as new outage requests.*



- **Consider including low voltage (LV) capacitors and breaker trip coil tests (BTCTs) for Auto Advance Approval**
  - *The IESO will not enable Auto-Advance approval rules for LV capacitors as the criteria for approval is not straightforward. BTCTs cannot be auto advance approved as trip tests could offload other equipment or reconfigure the system.*
  - *However, the 1-Day Advance Approval criteria for LV capacitors will be relaxed such that all outage requests to LV capacitors not deemed “Critical” will be eligible for 1-Day Advance Approval.*
  - *IESO proposes incorporating another constraint code for BTCTs and making them eligible for 1 Day Advance Approval (subject to Hydro One review)*

- Planned Outage requests only containing equipment considered “Low Impact” will be subject to the lead times of the 1 Day AA process (i.e. 16:00 EST, 2 business days in advance)
- Planned Outages requests containing equipment considered “Critical” or “Non Critical” will be subject to the lead times of 1 Day AA process if the outage request’s attributes meet any one of the following conditions (as per Appendix B of Market Manual 7.3):
  - Generators with:
    - Constraint Code “AVR OOS” or “PSS OOS”
    - AND Loss of Redundancy (LOR) Flag = YES
  - Any eligible Equipment Class with:
    - Constraint Code “PROT OOS”
    - AND LOR Flag = YES

- Any Breaker with:
  - Constraint Code “BF PROT OOS” or “BTCT”
  
- SPS, AC/DC Station Service, Tone Communication Channels, RTU/ICCP/HUB Equipment, Other Communication Equipment or Other Miscellaneous Equipment with:
  - Constraint Code “OOS” or “IS”
  - AND LOR Flag = YES
  - AND Max Recall  $\leq$  15 min
  
- Any Generators with:
  - Constraint Code “OOS” or “IS” or “DRATE” or “MUST RUN”
  - AND the Planned Start + Planned End Date of the outage request is in the same day
  - OR Max Recall  $\leq$  15 min
  
- Any Lines or Line Sections with:
  - Constraint Code “HOLDOFF”

- Any Generator with:
  - Constraint Code “SMO” (SMO = Segregated Mode of Operation)
    - This is a NEW constraint code proposed to make SMO eligible for 1 Day AA
  
- Any Generator or Load with:
  - Constraint Code “ASP OOS” (ASP = Ancillary Service Provider)
  - AND the Planned Start + Planned End Date of the outage request is in the same day
  - OR Max Recall  $\leq 15$  min
    - This is a NEW constraint code proposed to make Regulation, Voltage Support or Black Start Services eligible for 1 Day AA

- **AC/DC Station Service (SS) Equipment**
  - Priority Code = Planned;
  - *AND* Equipment Class = AC/DC Station Service;
  - *AND* Constraint Code = OOS;
  - *AND* LOR = YES;
  - *AND* Max Recall is  $\leq 15$  minutes;
  - *AND* **is Transformer Cooling Affected** = NO;
  - *AND* there are no conflicting outage requests occurring (same station + equipment class + constraint code)
- Highlight text will be changed to *AND* **Does the SS supply XFMR cooling** = NO;
  - Modified after recognizing that even if cooling wasn't affected, loss of the redundant (in-service) station service would reduce a transformer's thermal rating instantaneously.
  - The IESO must respect these thermal limits post contingency which requires manual assessment prior to approval.

- FAA will be a flag on the outage request that provide participants with Final Approval status in advance
  - The flag can be set automatically via Auto AA validation and manually set or unset by the IESO user.
  - A phone call to the IESO Control Room requesting final approval is not required provided the FAA flag is still present on the day the outage is scheduled to start.
- The following outage requests that receive Auto AA will also receive FAA:
  - Holdoffs
  - Primary Protections
  - AC/DC SS Equipment
  - Tone Communication Channel Equipment
  - UFLS
  - Distribution and Load Equipment (still under IESO review)

- State Transition Rule:
  - If FAA flag is still present at 00:01 EST on the day the outage starts, the outage will auto transition from Advance Approved to Final Approved.
  - Transition to Final Approved status is necessary so that the MP can enter actual start times and place the outage “In Progress”

- Conflict Checking will have two purposes:
  1. Enables (or prevents) Auto AA
  2. Warning mechanism for undesirable outage request combinations
  
- 1. Auto Advance Approval rules were discussed at the June 4 meeting:
  - Conflict Checking will prevent overlapping outages to the same equipment from receiving Auto AA
  - The outage request would still be accepted for manual advance approval (or rejection/at risk) in the next available process



## 2. Undesirable Outage Request Combinations:

- IESO will be able to configure ‘undesirable equipment combination’ groups in the vendor software
  
- Examples:
  - No more than 1 230 kV transmission line out of service between 2 adjacent transmission zones in the Northwest area
  - No more than 4 North East area generators out of service at a time
  - No more than 3 500/230 kV transformers out of service at a time
  
- Conflicts will not prevent submission, rather present the MP with a warning:
  - Web Client: MPs are asked whether they still want to submit
  - API: MPs are warned only after submission takes place (not desirable but no ability to change at present time)
  
- Feature will be available in all processes

- The IESO is still discussing this item with the vendor and will present a proposal at SE019 meeting
- The proposal will consider migration of:
  - Historical Outage Requests (Completed, Rejected, Cancelled etc.)
  - In Progress Outage Requests
  - Future (Submitted) Outage Requests

- **July 11** – Stakeholder Feedback Due
  - 1 Day Advance Approval Criteria Software Validation
  - Modifications to Auto Advance Approval
  - Proposal for Final Approval in Advance
  - Conflict Checking Validation
- **July 18** – IESO Response to Feedback Due
- **July 25** – Post Materials for the next SE109 Meeting
- **July 30** – Next SE109 Meeting

Questions/Comments?