

Stakeholders were asked to provide feedback on the following materials presented at the June 4, 2014 meeting:

- The proposed Equipment Model, specifically whether the equipment classes being proposed align with the equipment market participants typically report outages against.
- The proposed method for reporting outages to primary protections, breaker failure protections, automatic voltage regulators and power system stabilizers.
- The proposed constraint and purpose codes associated with the priority codes of the final process design.
- The proposed mechanism for Auto Advance Approval.
- The proposed methodology for enabling the lead time validation for the 3 Day and 1 Day Advance Approval processes within the vendor's existing software framework.

Feedback was received from the following stakeholders:

- Gerdau
- Hydro One
- Ontario Power Generation
- Portlands Energy Centre

The following pages provide stakeholder feedback in verbatim. The feedback is grouped by the questions that stakeholders were asked to provide feedback on and IESO responses and actions that will be taken are provided in italics beneath each piece of feedback.

1. Feedback on the proposed Equipment Model, specifically whether the equipment classes being proposed (slide 18) align with the equipment market participants typically report outages against.

Gerdau:

A few years ago, we sat down with a group from the IESO and reviewed the pieces of equipment in our Substation that the IESO considered reportable. The list was long and detailed and I could not understand why all of the items were required. Through discussions, the IESO found that elements could be combined, especially in consideration of our system structure as a radial feed for our facility. The result was a shortened list that satisfied the IESO's requirements and was workable for our outage management.

I see no reason why that same list should not be transferred to the new software system for outage management.

The IESO intends to transfer all existing outage reporting lists for market participants using the Online Outage Request Form (ONLORF), however due to the revised equipment model being proposed, some of the equipment class nomenclature will change (e.g. Load Transformer or Unit Transformer will both be classified as Transformer). The IESO will need to further consult API user organizations (i.e. Hydro One and OPG) on how much of their equipment currently modelled in IOMS will be migrated to the new vendor equipment model.

An equipment and outage request migration plan will be proposed at the next SE109 meeting.

Ontario Power Generation:

OPG has no concerns with the proposed equipment model and the proposal captures typically used equipment classes.

Portlands Energy Centre:

Equipment classes align with equipment that outages are reported against.

The IESO considers the proposed equipment model final and will incorporate it into the design document which the vendor will use to configure their software.

- 2. Feedback on the proposed method for reporting outages to primary protections, breaker failure protections, automatic voltage regulators and power system stabilizers (slide 19). Participants are encouraged to provide suggestions for reporting on other auxiliary equipment in this manner.**

Ontario Power Generation:

OPG has no concerns with the proposed alternate method for reporting the equipment classes listed above provided this methodology is not mandatory. OPG has not yet confirmed whether existing software can accommodate this change so provided OPG can still use "other miscellaneous equipment" class to convey outages to these equipment types there are no issues.

The IESO considers the proposed method for reporting equipment outages to primary protections, breaker failure protections, automatic voltage regulators and power system stabilizers model final and will incorporate it into the design document which the vendor will use to configure their software.

The proposed methodology for reporting the auxiliary equipment classes listed above will not be a mandatory means for reporting these types of equipment, however any participant that chooses to use "other miscellaneous equipment" to report outages to the auxiliary equipment identified in question 2 above will be precluded from receiving automatic advance approval on submission and from participating in the 1 Day Advance Approval process as the vendor software would have no way of validating whether the "other miscellaneous equipment" represents the auxiliary equipment in question 2 above.

By default, the "other miscellaneous equipment" class will be considered non-critical equipment and subject to the submission deadline of the 3 Day Advance Approval process (i.e. 16:00 EST 5 business days in advance) unless of course the outage request attributes satisfy the 1-day advance approval criteria of representing a loss of redundancy and a recall time of ≤ 15 minutes.

Portlands Energy Centre:

This is a good change.

- 3. Feedback on the proposed constraint and purpose codes associated with the priority codes (i.e. forced, urgent, planned, opportunity and info) of the final process design (slides 20 – 24). Participants are encouraged to provide suggestions for additional constraint or purpose codes that would be meaningful to their outage reporting needs.**

Ontario Power Generation:

The IESO has identified 5 priority codes in the material presented. OPG assumes for each priority code listed that any constraint code can be used in combination with the priority code. Please confirm this assumption. It is unclear if purpose codes will be restricted to specific constraint codes or can be used in any combination with the constraint codes. Also will a single outage request be able to have multiple sequential constraint codes such as is currently permitted under testing. Please confirm that the "other" purpose code will be applicable to any constraint code.

In order to maintain consistency with "event types" currently recognized by IOMS, OPG requests consideration be given to including "Test" as a priority code. Also consideration should be given to including "Must Run" as a recognized constraint code. There are contributing factors such as equipment protection or regulatory requirements that can require a generator to remain on line. Although it is the participant's obligation to offer a resource to achieve the desired dispatch inclusion of this constraint code more clearly identifies the requirement to the IESO.

The assumption that any constraint code can be used in combination with any priority code is correct. Also, a single outage request will be able to have multiple sequential constraint codes applied. The "Other" purpose code will be available to any constraint code.

The IESO will not incorporate a "Test" priority code as it is better suited as a purpose code or description of the work being performed under a planned, forced, urgent, or opportunity outage request.

The IESO agrees that inclusion of a Must Run constraint code would more clearly identify the market participants' intentions during the outage request. The IESO will consider inclusion of this code provided that the impact of the constraint is identical to the impact of the "Derate" constraint code (i.e. the maximum MW capability or capacity of the resource for the duration of the constraint period). A proposal on whether to incorporate the code will be provided at the next SE109 meeting.

4. Feedback on the proposed mechanism for Auto Advance Approval (slide 25 - 32). Participants are encouraged to provide suggestions for additional constraint or purpose codes that would be meaningful for their outage reporting needs.

Gerdau:

The Auto Advanced Approval mechanism for Distribution Equipment is ideal for loads. Nearly all of our outages involve maintenance work that requires transformers to be unloaded. We may be working on those unloaded transformers and associated switchgear or may use station equipment to provide isolation for downstream equipment in our plant. These outages provide little or no impact on the grid operation and the use of Auto AA outage management will save time and effort for the IESO while providing the flexibility required to integrate station work with our production processes.

Ontario Power Generation:

OPG has no comments on the proposed Auto Advance Approval rules at this time but sees limited applicability from a generator perspective.

Portlands Energy Centre:

The proposal will require training so that market participants are able to determine whether a particular outage meets the Auto Advance Approval criteria.

The IESO considers the proposed mechanism for Auto Advance Approvals final and will incorporate it into the design document which the vendor will use to configure their software.

5. Feedback on the proposed methodology for enabling the lead time (i.e. submission deadline) validation for the 3 Day and 1 Day Advance Approval processes within the vendor's existing software framework (slides 33 - 36).

Ontario Power Generation:

OPG understands the desire to maintain software flexibility and minimize cost but OPG will not support any further reduction in scheduling flexibility due to software limitations. The software

solution should provide the same availability to the 1 day AA process as the current manual validation process.

OPG offers the following comments/questions on the scenario provided (in **bold** letters):

Lead Time Validation Scenarios (Slide 36)

Greenfield G1 (Non Critical Facility Class)

- **Ignoring any outage request attributes, a planned outage to Greenfield G1 would have a submission deadline of 16:00 EST, 5 business days in advance**

No new code required: G1 can be classified as non-critical and any planned outage request for G1 would have a submission deadline of 16:00 EST 5 business days in advance

Elimination of the 1 day AA process for non-critical facilities is not acceptable.

- **However, according to the 1 Day AA criteria, if the Greenfield G1 outage request starts and ends in the same day or has a max recall ≤ 15 min, the planned outage would now have a submission deadline of 16:00 EST 2 business days in advance.**
 - **New code required: G1 is Non-Critical, but software must ignore the 5 business day deadline and determine that a 2 business day deadline applies based on specific outage request attributes.**

In OPG's opinion this is the preferred option as it maintains the current 1 Day AA process.

- **Alternatively, G1 could be modelled as a Low Impact Facility Class and be eligible for 1 Day Advance Approval regardless of outage attribute criteria.**

Does this imply that a facility that is deemed to be low impact can submit any outage for 1 Day AA even if it doesn't meet the current pre-approval criteria e.g. an outage greater than 1 day? If so, what criteria would be used to determine that a facility is low impact? If generators would be excluded from this facility class this option would not be acceptable as scheduling flexibility would be reduced.

OR

- **G1 could be modelled as a Non Critical Facility Class and be eligible for 1 Day Advance Approval if the "Low Impact 00S" constraint type is used.**

This alternative appears to be acceptable but as the constraint code is selected by the participant will the software still not have to validate the outage attributes to ensure pre-approval criteria are met?

At this time OPG may not leverage all available constraint codes due to anticipated application changes required. Will the manual pre-approval validation process still be available following final process/tool implementation?

The IESO has requested the vendor use a combination of modelling facilities by impact (i.e. facility class) and incorporating new code to ignore the non-critical submission deadline when outage request attributes satisfy the 1-Day Advance Approval criteria for all elements in Appendix B of Market Manual 7.3 except:

- Generation Facility Plant Auxiliaries that affect more than a single generator or aggregate of generators where the loss of an additional element results in multiple unit/aggregate shutdowns within 48 hours such as: Service air or instrument air, boiler feed pumps and station service.

This specific inclusion criterion will not be incorporated into the software as it is a low frequency event and would require a substantial customization for a piece of equipment that would be reported under the 'other miscellaneous equipment' class. Any equipment reported using the 'other miscellaneous equipment' class would be eligible for 1 Day Advance Approval if the outage request represents a loss of redundancy and a recall time of ≤ 15 minutes.

The manual 1-day Advance Approval (i.e. pre-approval) validation process will no longer be available following deployment of the new solution.

6. Other comments.

Hydro One:

The list below provides feedback from Hydro One with respect to the materials presented at the June 4 meeting:

- PARKED STATE (Or equivalent) – As discussed in our meeting, Hydro One would like to see the addition of a PARKED state in the IESO's process. This additional state would allow outages to be parked from any state with the exception of *completed* and *in progress* outages. Furthermore, the PARKED slips must have the ability to be resurrected using the same outage ID, and should be able to progress through the process normally.

The IESO has followed up on this request with the vendor and as mentioned at the June 4th meeting, the proposed 'Draft' outage state could be used to reflect the Hydro One 'Parked' state. The IESO will consider applying the state transition rules of the Hydro One 'Parked' state against the proposed 'Draft' state as this would be a simple configuration in the vendor software. Any modified transition rules associated with the 'Draft' state would of course be available to all market participants.

- IESO Tab – Hydro One would like to have more information displayed in our IESO tab. We would like to see outages pertaining to any market participant impacting Hydro One displayed within tab. An example would be that if MISO has submitted an outage to the IESO, and the IESO requires a similar slip from Hydro One, we would have the ability to check times and equipment that MISO has requested, in order to match their slip.

As mentioned at the April 23rd meeting, the vendor software will allow market participants to retrieve and view outage requests submitted by other 3rd party market participants provided the 3rd party participant has no confidentiality concerns with doing so. The ability to establish permissions is an IESO-configurable relationship in the vendor's software. The IESO intends to establish these relationships prior to testing and deployment of the new solution.

- The IESO should be able to see a list of the tickets that are currently in error along with a definition of the error, similar to how Hydro One sees them. Currently, only Hydro One gets a list of tickets that have generated an error when sent to the IESO, however in many cases, the error is on the IESO's side (e.g. IESO is missing equipment). If the IESO also received a list of the tickets that have errors, they could resolve many of them without us (Hydro One users) having to call/email the IESO to make changes.
- Show all errors that are present on a ticket, not just the first error. Currently, when a ticket generates an error with the IESO, the sending process stops when the first error is encountered and the ticket is resent when that error is resolved. This creates an issue with tickets that have multiple errors because they must be dealt with one at a time. This is very time consuming and requires a lot of back and forth communication between us and the IESO. If the NOMS/IESO interface showed a list of ALL errors in a ticket, perhaps on a more detailed IESO tab, this would allow us to resolve the errors much quicker and more efficiently.
- Tickets that have errors are still sent through to the IESO. Currently, when a ticket is sent to the IESO and generates an error, the sending process stops and the IESO does not receive any information until the error is resolved. This can be very problematic, especially for short notice outages, if the user does not notice the error. If the tickets in error are still sent through to the IESO, then at least the relevant information of the outage would be seen by the IESO. These tickets would still be (visibly) flagged as having errors that needed to be resolved. With this system we could implement a block where a ticket could not be "actioned" to another state if it currently has an error with the IESO. This would allow the information for an outage to be seen by the IESO, while at the same time it would prevent users from simply ignoring the errors.

The IESO will discuss the three 'error' comments above with the vendor and will further discuss these items individually with Hydro One as they are specific to the Hydro One outage management system.

- Outage extensions – As discussed, the new process and tool should not add additional limitations in terms extending outages. Hydro One would like the ability to extend both planned and forced outages, using existing slips, without the need to create new slips, or requiring a new ID.

Upon further review with the vendor, the ability to extend any 'In Progress' outage priority (i.e. Planned or Forced) in the same manner as today will require a minor customization. The IESO will incorporate this feature into the software design in order to preserve the efficiency of extending an outage given the relatively high volume of outage requests that become extended. The extension feature will be presented in detail at the next SE-109 meeting.

- URGENT outages – Currently in NOMS we display outages within a short notice window using the “PSN – Planned Short Notice” option. However, this encompasses all outages within 33 days of the planned start date. Does the IESO see any benefit in Hydro One adding an URGENT flag in NOMS to mimic your process?
- Equipment matching – Currently in NOMS, we have administrative rights to able to add or remove equipment to match out Network Management System. Hydro One is requesting that the IESO retain this functionality while moving forward to the new tool. Furthermore, we feel this may also be a good time to match equipment modelled in NOMS with the IESO’s tool to avoid issues with nomenclature. Currently, we use PSDB as our source of truth and match all equipment in NOMS to this.

The IESO will further discuss the 2 items directly above individually with Hydro One as they are specific to the Hydro One outage management system.

- Priority Codes – Hydro One is requesting that Priority Codes be user configurable CROW. This will allow for additional flexibility moving forward.

The IESO will not be requesting this capability as priority code changes would require some time to stakeholder the changes. As a result, Priority codes will remain vendor configurable.

- Pre-approval items – Although distribution equipment including DESN transformers, transformer breakers, and LV busses are included in the pre-approval process, Hydro One would also like to see LV capacitors included in this list. With the inclusion of LV capacitors a majority of the LV bus outages will not be able to proceed through the pre-approval process. Furthermore, breaker trip coil tests (BTCT’s) should also be added to the list of outages which can be pre-approved.

The IESO will not be incorporating Auto-Advance approval rules for low voltage capacitors as the criteria for approval is not as straightforward as that of an auxiliary equipment, for example. However, due to an enhanced capability present in the vendor software, the 1-Day Advance Approval criteria for low voltage capacitors will be relaxed such that all outage requests to low voltage capacitors not deemed ‘Critical’ will be eligible for 1-Day Advance Approval, regardless of duration or recall time.

With respect to breaker trip coil tests, the IESO will perform some analysis on the request for additional scheduling flexibility for these types of outage requests prior to providing an update at the next SE109 meeting. However, this request will only be considered for the purposes of eligibility for 1 Day Advance Approval, not Auto Advance Approval.

Business process document – Hydro One is also requesting that a business process document highlighting changes be presented to the Hydro One for further feedback. A Requirements Document is needed before we can obtain any kind of estimate of hours, scope of work or release date from the vendor.

As mentioned at the June 4 meeting, the IESO will present a Final Process design document for stakeholder review at the next SE-109 meeting. In addition to a process document, the IESO has requested the vendor provide an API specification as one of the first deliverables for the software development project. It is estimated that the API specification would be made available by the end of September 2014.

Portlands Energy Centre:

1. The presentation has the following wording:

“The IESO will consider calculating and incorporating this reserve margin scenario into the 18 month outlook for the purposes of supporting the Quarterly AA process and provide feedback at a future meeting.”

We support the calculation and inclusion of the above in the 18 Month Outlook.

The IESO will consider the support for inclusion and provide feedback at a future SE-109 meeting.

2. The presentation has the following wording:

“–The IESO proposes retaining historical outage requests in the new system for at least five years.

However retention of historical outage request data from the existing solution to the new solution is subject to further IESO and stakeholder consultation (to be discussed at the next SE-109 meeting)“

We support both the retention of historical outage requests for at least five years and the importing of historical outage request data from the existing solution to the new solution.

The IESO will present a migration strategy for completed, in-progress and currently submitted outage requests at the next SE-109 meeting. The new software is expected to retain all migrated and newly submitted outage requests for a minimum of five years after they are placed in an “end” state (i.e. Completed, Cancelled, Rejected, Revoked and Recalled).