

OUTAGE MANAGEMENT PROCESS REDESIGN (SE-109)

Mark Gojmerac
Project Manager, IESO
August 19, 2015

Agenda

- Project Progress Update
- Requirements Summary Document Updates
- Undesirable Equipment Combinations (i.e. Outage Planning Guidelines)
- Proposed Data Migration and Process Transition Plan
- Next Steps

Project Progress Update

- Market Rules recommended for IESO Board approval by the Technical Panel
 - Board approval anticipated on Aug 26 for implementation Q3 2016
- Market Manual development underway
 - SE-109 review anticipated during Nov 2015
- Vendor development on track (60% complete)
 - 3 more months of software development followed by 3 months of quality assurance testing before being released to IESO
- Early deployment system testing uncovered the following:
 - Additional flexibility in functionality (discussed later)
 - Limitations in automated outage request migration (discussed later)

Requirements Summary Document Updates: Additional Flexibility in Software Functionality

- Changes to planned start and end date will be permitted under the following outage request statuses:
 - Final Approved
 - Implemented
- A more efficient way to implement unanticipated changes just prior to or during outage request implementation.
- Refer to the latest version (v5) of the Requirements Summary Document posted on the SE-109 webpage.

Requirements Summary Document Updates (con't): Additional Purpose Codes

- Segregated Mode of Operation (SMO)
 - Applicable for the following priority codes: Planned and Opportunity
 - This purpose code was covered during previous SE-109 design meetings but was inadvertently left out of the requirements summary document
- Transmission Equipment Derating
 - Proposed at Hydro One request
 - Applicable for the following priority code: Information
 - Offers a way for participants to segregate these information-type equipment restrictions from those submitted under the general 'Other' purpose code

Requirements Summary Document Updates (con't): Additional Purpose Codes (con't)

- Cyber Asset Change and Relay Setting Change
 - Proposed at Hydro One request
 - Both applicable for the following priority codes: Planned
 - Offers a more intuitive way to communicate and assess hardware/software changes for the following types of equipment: Protections Relays, RTUs, Gateways, Routers etc.
- Outage Request Example:
 - Priority Code = Planned
 - Equipment Requested = B560V (500 kV Transmission Line)
 - Constraint Code = PROT OOS (i.e. Protection Out of Service)
 - Purpose Code = Relay Setting Change

Undesirable Equipment Combinations (i.e. Outage Planning Guidelines)

- Help participants and IESO avoid scheduling conflicts and improve outage scheduling and assessment efficiency
- Form part of the conflict checking feature within the new outage management system
- Constraints: Confidentiality issues with publishing this information
 - IESO's initially proposed addressing this with public vs. private reports
 - As guidelines were developed, many of the 'public' guidelines required details that were in fact confidential

Undesirable Equipment Combinations (con't)

- Undesirable combinations can only be made available to participants that own/operate equipment that form an undesirable group
- This may introduce IESO administrative burden outside the original scope of the project
 - Impact assessment required
 - Alternatives being considered (e.g. software integration vs. verbal notification)

Undesirable Equipment Combinations (Example)

- In this example, Hydro One would be the only participant made aware of the undesirable group and any associated information as they are the owner/operator of the facilities within the group.

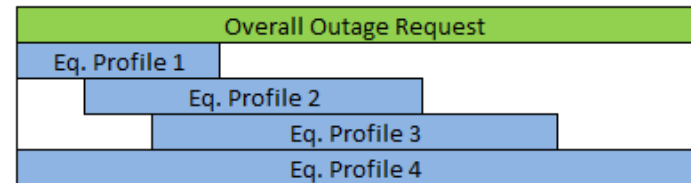
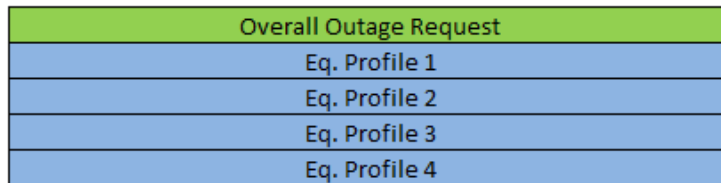
Group Name	Facilities	Maximum Number of Facility Outages Permitted in the Group	Reason
Flow Into Ottawa (FIO)	X522A X523A L24A M32S	1	Pre and Post-contingency Voltage Concerns
New York (Niagara) Interface	PA301 PA302 PA27 BP76	1	Post-contingency Thermal Concerns
GTA 500-230 kV Transformers Spring/Fall	<u>Claireville T13</u> <u>Claireville T14</u> <u>Claireville T15</u> <u>Claireville T16</u> <u>Cherrywood T14</u> <u>Cherrywood T15</u> <u>Cherrywood T16</u> <u>Cherrywood T17</u> Parkway T3 Parkway T4 Trafalgar T15 Trafalgar T14	3	Post-contingency Thermal Concerns

Proposed Data Migration: Outage Requests

- Preliminary tests were conducted with the vendor to determine what scope of outages could be migrated from IOMS to the new system:
 - Historical (-3 years), occurring and future (+10 years) outage requests are within scope
 - Findings show the following types of outage requests will NOT be migrated:
 - All outages with status = Cancelled
 - All outages with equipment profile codes = Information
- (continued on next slide)

Proposed Data Migration: Outage Requests (con't)

- Findings show the following types of outage requests will NOT be migrated:
 - All outages with overlapping equipment profile start and end times that differ from the overall outage start/end times:



Proposed Data Migration: Outage Requests (con't)

- All outages with different equipment profile codes on the same piece of equipment:

Overall Outage Request		
Equip A - Derated To		
	Equip A - Derated To	
		Equip A - Derated To



Overall Outage Request		
Equip A - Out of Service		
	Equip A - Derated To	
		Equip A - In Service



- Migration of revision history not supported
- Bulk migration tests scheduled in a few weeks - new findings will be communicated at the next stakeholder meeting

Proposed Data Migration: Outage Requests (con't)

- IESO will inform participants which of their existing outage requests will not be migrated
- Participants will be required to manually resubmit any in-progress or future outages that will not be migrated
 - A resubmission deadline will apply for the purposes of retaining the timestamp of these outages from IOMS
- IESO will manually migrate the timestamps of these outages from IOMS to the new system if the resubmission deadlines noted above are met.

Proposed Data Migration: Equipment Nomenclature

- The existing equipment database for outage management will be replaced with the IESO's equipment registration database
- There are station and equipment nomenclature differences between these databases that need to be resolved before cutting over
- Participants currently using an API to report outages will be required to remap or modify some of their station and/or equipment nomenclature to match the registration database
 - The IESO will provide API user participants with a list of the required changes in the next few months

Proposed Process Transition Plan

- Go Live Date planned for Wed Sept 7, 2016
- Direct Cutover (i.e. no parallel operation between old and new)
- No planned outages should be submitted to IOMS between 16:00 Mon Sept 5, 2016 and 16:00 Sept 7, 2016.
- No planned outages should be scheduled to start Sept 6 through Sept 8, 2016 or end on Go Live
- ‘Hybrid’ process will be in place for 2 weeks post Go Live to manage timeline differences between the existing and redesigned processes.

Proposed Process Transition Plan: Quarterly Advance Approval Process

- Not impacted by Go Live as the new Quarterly process will not commence until October 1, 2016
- Outage requests starting between Jan 1/17 and Jun 30/17 will be assessed between Oct 1/16 and Nov 30/16 if they are submitted prior to Oct 1/16 (i.e. start of the quarterly study period).
- Participants are encouraged to review and firm up their outage plans for Jan – June 2017 prior to the Oct 1/16 submission deadline.

Propose Process Transition Plan: Daily and Weekly Advance Approval Processes

- The new outage system will ignore submission lead time requirements for planned outages during Go Live migration from IOMS.
- All planned outages submitted before 16:00 EST Mon Sept 5/16 and scheduled to start between Fri Sept 9/16 and Mon Sept 12/16 will be assessed by 16:00 Tues Sept 6/16.

Sep-16						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2						

Go Live
Last Submission Day (Old Process)
Last Study Period (Old Process)
Last Coverage Period (Old Process)

- The redesigned processes will commence after 16:00 on Go Live for new planned outage submissions

Proposed Process Transition Plan: 1 Day Advance Approval (AA) Process

Sep-16						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2						

Go Live
Submission Deadline
Study Period
Coverage Period

- The first 1 Day AA submission deadline is 16:00 EST on Sept 8 for any newly submitted low impact outages starting Sept 10 – 12 (i.e. the first 1 Day AA coverage period)
- All planned outages starting Sept 10 – 12 and submitted prior to Go Live will have already been assessed (see previous slide).
- Planned outages submitted under the old process and starting Sept 13 & 14 will be assessed by the 1 Day AA process (regardless of criticality) as the first 3 Day AA coverage period doesn't start until Sept 15 (next slide).

Proposed Process Transition Plan: 3 Day Advance Approval (AA) Process

Sep-16						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2						

Go Live
Submission Deadline
Study Period
Coverage Period

- The first 3 Day AA submission deadline will be 16:00 EST on Sept 8 for any newly submitted non-critical outages starting Sept 15 (i.e. the first 3 Day AA coverage period)
- Non critical outages submitted under the old process and starting Sept 15 onward will be processed by the 3 Day AA process no different than if they were submitted after Go Live
- Critical outages submitted under the old process and starting Sept 15 – 25 will also be processed by the 3 Day AA process as if they were non-critical since the first Weekly coverage period doesn't start until Sept 26 (next slide).

Proposed Process Transition Plan: Weekly Advance Approval (AA) Process

Sep-16						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2						

Go Live
Submission Deadline
Study Period
Coverage Period

- The first Weekly AA submission deadline will be 16:00 EST on Sept 9 for any newly submitted critical outages (or those requesting Weekly AA) starting Sept 26 through Oct 2 (i.e. the first Weekly coverage period)
- Critical outages submitted under the old process and starting the week of Sept 26 onward will be processed by the Weekly AA process no different than if they were submitted after Go Live

Next Steps

- Stakeholder Feedback (due Sept 4)
 - Requirements Summary Document Updates
 - Data Migration and Process Transition Strategy
 - IESO Response (due Sep 18)
- Stakeholder feedback on undesirable equipment combinations (due Sept 25)
- Next Webinar (Oct 2015)