Table of Contents

References

1. M/LCC 7 - Processing Transmission Outage Applications
2. M/LCC 7 - Attachment C - Outage Coordination Verification and Revision Process for BES Category A and Category B Facilities
3. M/LCC 1 - Nuclear Plant Transmission Operations Attachment C & D
4. M/LCC 15 - System Operating Limits Methodology
5. M/LCC 15 – Attachment H – Voltage SOL Identification Procedure
6. M/LCC 18 - New England System Restoration Plan
7. OP 19 - Transmission Operations
8. OP 3 - Transmission Outage Scheduling
9. OP 24 - Protection Outages Settings and Coordination
10. OP 24 – Attachment C – Transmission Facilities Required to Report Protection Characteristics, Failures or Degradation
11. OP 24 – Attachment D – Required Protection Outage Request Form and Examples
12. CROP.25007 Manual Dispatch
13. CROP.32002 Generation Outages
14. CROP.34001 Double C
15. CROP.34007 Contingency Analysis
16. CROP.34006 Clogger Transmission Constraints and EMSOUT
17. CROP.34008 TOG Alarming and EMS
18. CROP.34010 Transmission Limits
19. CROP.36002 Redeclarations
20. CROP.36003 Commitment De-Commitment Self-Scheduling and Self-Dispatch

Procedure Background

Forced or Emergency transmission outage applications shall be processed in accordance with M/LCC 7 – Processing Transmission Applications.

TOG (Transmission Operating Guide) is an all-inclusive term for: TOG Stability, TOG Text, TOG RAS/ACS, and TOG temporary.

Market Sensitive Information: An outage request is deemed Market Sensitive if the outage takes a line or piece of equipment out-of-service, which would remove a resource from service.

A generator is considered "OOS due to transmission" if the generator is fully unavailable as a direct result of an outage of transmission equipment between the high side of the GSU and the point of interconnection. Refer to MLCC 7 Attachment C to view the non-TOA Transmission and BES Facilities list to determine whether the resource should be treated as a Category A or B facility.

For outage notifications received after the "Day Ahead Pre-Checkout meeting" (typically 0845) that are: emergency, forced, cancelled, delayed, overrun or completed early and will affect the NEXT operating day where the Day Ahead Market (DAM) has not been finalized; consideration should be given for a follow up verbal notification to the Short Term Outage Coordination (STOC) Group in order to ensure proper DAM unit commitment, topology and limits are being reflected.

For outage notifications that are: emergency, forced, cancelled, delayed, overrun or completed early and will affect the NEXT operating day topology:

Notifications received prior to the "Next Day Operating Plan Daily Check Out"; STOC group will be responsible for updating the NEXT days Peak Study Case (OSD1)

Notifications received after the "Next Day Operating Plan Daily Check Out"; The On-Shift Security Operator will be responsible for updating the NEXT days Peak Study Case, while performing Nightly Studies I.A.W. CROP.34009.

While reviewing the outage application, determine the following:

- How the equipment will be removed from service;
- Generation must run requirement;
- Generation reductions;
- Generation out-of-service;
- Applicable TOG's;
- Temporary limits for the outage, verify with the applicable LCC Operator;
- If further operational information is provided, using the Study tabs

System condition allowances for switching activities that are typically completed within 15 minutes are as follows:

- Pre-contingent system conditions during switching:
  - During the time period when switches are open, a transmission facility may not exceed the LTE limit
- Contingency protection during switching:
  - During brief switching activities (typically 15 minutes or less, but not to exceed 30 minutes), ISO will only provide first-contingency coverage as long as restoring the outage is not the corrective action.

Approval for an outage will **NOT** be withheld unless the consequences of granting the approval would result in a risk of **NOT** being able to maintain OP-19 normal criteria or MLCC15 - Attachment H Criteria.

For outages that can be modeled in EMS, use Powerflow, ILC Powerflow, and STCA to study the outage request.

When studying an outage ensure the applicable items are reflected in the Powerflow case:

- Actions from the applicable TOG(s) are modeled.
- Generation limitations are modeled
- Generation must run(s) are modeled
- Devices used for the outage state are used for modeling the outage

Boundary lines will only be skipped in ILC if the outage has an associated TOG directing which lines to skip, or as annotated in the applicable outage application. Skip a boundary line by clicking the "Skip" button associated with the element.

When a transmission outage reduces the normal NY-NE and NE-NY transfer limits, use a 100 to 150 MW margin below the SOL limit for the scheduling TTC. Example, if the SOL limit for NY-NE is 750 MW, use 600 MW for a schedule TTC and if the NY-NE SOL limit is 700 MW, use 600 MW for a schedule TTC. NY scheduling software can only use 100 MW increments.

When a transmission outage reduces the normal NB-NE and NE-NB transfer limits, use a 50MW margin below the IROL limit for the scheduling TTC.
The ISO Outage Scheduling software alerts the System Operators by highlighting the outage application in red (potential overrun) when the Planned End Time has been exceeded.

Example 1 - **NOT** an Overrun:
Outage has a Planned End Date/Time = 3/4/2019 @1600
Security Desk gets call from LCC on 3/4/2019 @1500 that the outage will extend until 2300.
This is **NOT** an Overrun. Do **NOT** set the Overrun flag in the ISO Outage Scheduling software.

Example 2 - An Overrun:
Outage has a Planned End Date/Time = 3/4/2019 @1600
Security Desk gets call from LCC on 3/4/2019 @1500 that the outage will extend until 3/5/2019 @1200
This is an Overrun. Set the Overrun flag in the ISO Outage Scheduling software and note in the outage request an expected planned end date and time and then change the Planned End Date Time.

Common Procedure Information

A. Any ISO-NE qualified Control Room Operator has the authority to take actions required to comply with NERC Reliability Standards. A qualified ISO-NE Control Room Operator has met the following requirements:
   1. Have and maintain a NERC certification at the RC level (per R.1 of PER-003-2)
   2. Applicable Requirements of PER-005-2
   3. Approved to cover a Control Room Operator shift position by the Manager, Control Room Operations
   4. Is proficient at the current qualified level.

B. Real time operation is defined as the current hour and the current hour plus one.

C. Future hours are those beyond real time operation.

D. All verbal communications with Local Control Centers (LCC), neighboring Reliability Coordinators/Balancing Authorities (RC/BA), Designated Entities (DE), Demand Designated Entities (DDE) and/or SCADA centers shall be made on recorded phone lines unless otherwise noted.

E. For all communications
   1. Use the Basic Protocol for All Operational Communications as prescribed in M/LCC 13
   2. Use 'ISO New England' or 'New England'. Refrain from using 'ISO'.
   3. Use Asset ID's when communicating with DE/DDEs.
   4. Use three-part communication in all situations where its use will enhance communications.

F. Primary responsibilities are stated for each step within the procedure, but any ISO Control Room Operator qualified at that position or higher can perform the step. The Primary Responsibility may be delegated to an Operator in a lower qualified position, but the responsibility for its completion remains with the identified individual.

G. The use of “ensure” within this document means that a verification has been performed and if the item is not correct, corrective actions will be performed.

Procedure

Condition(s) to perform this section:

- **Prior to the start time of an approved outage; Or**
- **LCC Operator requests to start an approved outage.**

Section 1: Approved Outage

Notes

The expectation is that an approved outage is studied within 30 minutes prior to the time it is scheduled to start so that work is **NOT** delayed.

Step 1.1 Primary Responsibility: Security Operator

Review the outage application.

Notes

While reviewing the outage application there may be an associated switching application.

Step 1.1.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The LCC is requesting to start an approved outage early.**

Determine if there will be any adverse reliability or market efficiency that will result from the outage being taken early.

Instructions

- ❑ Notify the Senior System Operator and Operations Shift Supervisor;
- ❑ Perform a security assessment to identify any adverse reliability or market efficiency impacts;
- ❑ If there are no adverse reliability or market efficiency impacts as a result of starting the outage early, continue with this procedure;
- ❑ If there will be reliability or market efficiency impacts as a result of starting the outage early, notify the LCC that the outage cannot be started early and must wait until the approved start time.

Step 1.2 Primary Responsibility: Security Operator

Determine if there are any TOG's associated with the transmission equipment.

Step 1.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage request is an Intra-Area tie between two LCCs; Or**
- **The equipment affects the Primary Restoration Path to Seabrook.**

Notify the applicable LCC's Operator of the outage.

Notes

Outages on shared equipment will often have multiple applications, which represent work by more than one company. Do not cancel applications that appear to be duplicates without permission concurrence with the LCC.

Step 1.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Equipment associated to the outage is on the NPCC Area Facilities for Notification list.**

Notify the applicable RC/BA of the outage.

Step 1.5 Primary Responsibility: Security Operator

Perform a security assessment for the outage using Section 6.

Step 1.5.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Notify the Operations Shift Supervisor and Senior System Operator of the security assessment results.

Notes

This would include any Resource and TTC restrictions that were required due to the outage.

Step 1.5.2 Primary Responsibility: Operations Shift Supervisor

Notify the Senior System Operator and Security Operator of the decision to approve or deny the implementation of the outage.

Step 1.5.2.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage application has been denied in real time.**

Proceed to Step 1.7.

Step 1.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage application was approved to be implemented.**

Perform the following for the approved outage application.

Step 1.6.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage request is approved for implementation and limits were provided.**

Enter approved limits associated with the outage per CROP.34010 Transmission Limits.

Step 1.6.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage request is approved for implementation and has an associated TTC limitation.**

Inform the Generation Operator of the TTC limitation and when it will be used.

Step 1.6.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage requires must run generation.**

Verify the must run generation is on-line and at the required minimum output, if applicable.

Step 1.6.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage request is approved for implementation and requires generation dispatch prior to switching.**

Determine if EMSOUT should be used.

Step 1.6.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Generation dispatch is required but EMSOUT cannot be used; Or**
- **The generator or DARD pump is NOT dispatchable.**

Notify the Loader Operator of the manual dispatch required.

Step 1.6.6 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- **Notified that manual dispatch is required.**

Perform manual dispatch per CROP.25007 Manual Dispatch.

Step 1.6.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **EMSOUT will be used to perform the required dispatch.**

Activate EMSOUT for an element per CROP.34006 Clogger Transmission Constraints and EMSOUT.

Step 1.6.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage request requires generation or DARD pumps to be restricted or placed out-of-service.**

Inform the Generation Operator of the generation or DARD pumps that are restricted or out-of-service due to the outage.

Notes

- A generator is considered “OOS due to transmission” if the generator is fully unavailable as a direct result of an outage of transmission equipment between the high side of the GSU and the point of interconnection.
- Refer to MLCC 7 Attachment C to view the non-TOA Transmission and BES Facilities list to determine whether the resource should be treated as a Category A or B facility.

Step 1.6.8.1 Primary Responsibility: Generation Operator

Condition(s) to perform this step:

- **Transmission outage was scheduled.**

Perform section "Scheduled Outage" in CROP.32002 Generation Outages.

Step 1.6.8.2 Primary Responsibility: Generation Operator

Condition(s) to perform this step:

- **Transmission outage was Emergency or Forced.**

Perform section "Forced Outage" in CROP.32002 Generation Outages.

Step 1.6.8.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Resource restriction does not have an associated ILC Interface.**

Update the "Gen MW Alarm (Mw)" value on the Unit Limits Page for the resource.

Instructions

- ❑ Access the applicable TOG to determine the Generation Limit
- ❑ Enter the applicable limit into the "Generation Mw Alarm (Mw)" field on the resources unit limits page.

Step 1.6.9 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage requires notification per M/LCC1 for a nuclear generator.**

Notify Seabrook or Millstone 2 of the outage.

Notes

Millstone 2 is the point of contact for MIL2/3 outage notifications per M/LCC1 Attachment C.

Step 1.6.10 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Post first contingency backdown is required for a nuclear plant due to the outage.**

Notify Seabrook or Millstone 2 of any post first contingency backdown requirement associated with the outage.

Notes

- The lowest value that the nuclear generator could potentially be dispatched to.
- Millstone 2 is the point of contact for MIL2/3 combined backdowns as well as MIL3 individual backdowns per M/LCC 1 Attachment C.

Step 1.6.10.1 Primary Responsibility: Security Operator

Log the notification to the DE for post first backdown.

Instructions

Use log entry: > GENERATION > NUCLEAR > Nuclear Plant Informed of Possible Backdown

Step 1.6.11 Primary Responsibility: Security Operator

Contact the applicable LCC Operator and give permission to start the requested outage.

Step 1.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage application was denied in real time.**

Perform the following for the denied outage application.

Step 1.7.1 Primary Responsibility: Security Operator

Notify the applicable LCC(s) and STOC group that the transmission outage has been denied.

Step 1.7.2 Primary Responsibility: Security Operator

Update the outage application for the denial due to Real Time reliability.

Instructions

Update the outage application by:

- ❑ For an application that has been "Approved" but has **NOT** been implemented, toggle the "Cancel" status.
- ❑ Enter appropriate comments in the comment field of the ISO Outage Scheduling software.

Step 1.7.3 Primary Responsibility: Security Operator

Log the denial of the outage and include a reason for the denial.

Instructions

Use log entry: > OUTAGES > Denied [E]

Step 1.7.4 Primary Responsibility: Security Operator

Update the Peak Study case.

Step 1.7.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage was taken even after being denied due to reliability.**

Notify the Operations Shift Supervisor that the outage was still taken.

Step 1.7.5.1 Primary Responsibility: Operations Shift Supervisor

Notify ISO Control Room Management via e-mail using the "Control Room Mgmnt" distribution list that an outage was taken after being denied in real time with the outage details, the audio clips and the reliability reason for the outage denial.

Step 1.7.5.2 Primary Responsibility: Security Operator

Update the Peak Study Case

Condition(s) to perform this section:

- **Switching for the outage has commenced.**

Section 2: Actions for an Outage that has commenced.

Step 2.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The switching for the outage has commenced.**

Verify the RTNET Topology updates for the status change as expected.

Step 2.1.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **RTNET topology does NOT update to match SCADA.**

Manually update the RTNET topology to match SCADA.

Step 2.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The approved outage requires an adjustment of RTNET for proper modeling.**

Adjust RTNET to model an approved outage properly.

Instructions

Adjust the following for the corresponding equipment:

- ❑ Line Segments/Transformer:
  - ❑ Select the "Remove" check-box from the RTNET > LINE > Network Line/ Transformer summary.
- ❑ Line Segments/Transformers/Misc Equipment:
  - ❑ Adjust RTNET devices using the One-Line display
- ❑ Capacitors/Reactors:
  - ❑ From the RTNET > CAP > Network Capacitor/Reactor Summary - Select the "Remove" check-box
  - ❑ From the RTNET > ISO RRM > Capacitive/Reactive Reserve displays – Select the "Ignore" check-box

Step 2.3

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Directed to skip a boundary line per the applicable TOG or outage application.**

Skip the boundary line(s) for the applicable ILC Interface(s).

Step 2.4

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **A configurable parameter in an ILC Interface needs to be modified due to the outage.**

Modify the ILC Interface.

Step 2.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment is out-of-service and affects an Interface limit in ILC.**

Verify the Interface limit(s) in ILC updates for the equipment going out-of-service.

Step 2.5.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The Interface limit(s) in ILC did NOT update for the equipment going out-of-service.**

Manually determine the ILC limit(s).

Step 2.5.1.1 Primary Responsibility: Security Operator

Notify all on-shift Control Room personnel.

Step 2.5.1.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Upon approval from the Operations Shift Supervisor.**

Override interface limit(s).

Step 2.5.1.3 Primary Responsibility: Security Operator

Log the manual interface limit.

Instructions

Use log entry: > TRANSMISSION > ILC Interface Limit Change

Step 2.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage has an associated TOG or guide; And**
- **The table(s) contain limits that are affected by element statuses.**

Enable TOG alarming on a device.

Instructions

- ❑ Using CROP.34008 TOG Alarming in EMS, enable TOG alarming on necessary devices;
- ❑ Enter a note in the applicable CROW application using the "Outage Completion Action" button stating that the TOG alarming needs to be removed at the completion of the CROW application.

Step 2.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **EMSOUT was used.**

Close an active EMSOUT event per CROP.34006 Clogger Transmission Constraints and EMSOUT.

Step 2.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment is out-of-service and has a NB-NE Minimum flow requirement per a TOG.**

Enter the Minimum Flow Limit in the NB to NE Minimum flow display.

Instructions

- ❑ Navigate to the ICM display to access the NB to NE Minimum Flow display;
- ❑ Click "NB-NE MIN FLOW";
- ❑ Toggle the "Suspend" button to enable the well for "Manually entered Minimum Flow Limit:";
- ❑ Enter the applicable value per the TOG in the "Manually entered Minimum Flow Limit:" well;
- ❑ Verify the "Most Restrictive Limit" is being properly populated by the most restrictive of either:
  - ❑ "DOUBLEC V/R calculator Minimum Flow Limit:"; Or
  - ❑ "Manually entered Minimum Flow Limit:"
- ❑ Enter a value in the "Warning Alarm Margin:" well as determined by the Operator;
- ❑ Verify the "Warning Alarm Limit:" value displayed is the total of the "Most Restrictive Limit:" plus "Warning Alarm Margin:".

Notes

- Manually entered Minimum Flow Limits may need to be updated based on adders that may/may not be available per the facility out TOG.
- The maximum Warning Alarm Margin value enterable is 50MW.

Step 2.9 Primary Responsibility: Security Operator

Implement the outage application in the ISO Outage Scheduling software.

Notes

- For outages WITHOUT a change in topology; the implementation time can be the time approval was given to start the outage request.
- For outages WITH a change in topology; the implementation time can be the time of the topology change identified in the System Activity Log.

Condition(s) to perform this section:

- **LCC or RC Operator has notified ISO-NE that the completion of an outage will be delayed.**

Section 3: Delay in the Completion of an Outage

Step 3.1

Primary Responsibility: Security Operator

Condition(s) to perform this section:

- **Affected outage is Protection System Equipment listed in OP-24 Appendix C AND the outage duration from the time of implementation will now exceed 30 days.**

Notify the LCC of the following information that will be required.

Instructions

- ❑ An attachment to the outage request showing the progress in restoring the Protection System Component to service; AND
- ❑ A corrective action plan describing the steps that will be undertaken to restore the Protection System Component to service.

Step 3.2

Primary Responsibility: Security Operator

Notify Control Room Personnel that the outage has been delayed in completion.

Step 3.2.1

Primary Responsibility: Security Operator

Notify the Senior System Operator and Operation Shift Supervisor that the outage has been delayed in completion.

Step 3.2.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service.**

Inform the Generation Operator of the generation or DARD pumps that are restricted or out-of-service due to the outage.

Step 3.2.2.1

Primary Responsibility: Generation Operator

Perform section "Delay in Outage Completion" in CROP.32002 Generation Outages.

Step 3.2.3

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment limits a Scheduling Interface**

Notify the Generation Operator how long to extend the Scheduling Interface Total Transfer Capability (TTC) limitations.

Step 3.2.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service; Or**
- **The transmission equipment limits a Scheduling Interface**

Notify the Forecaster that the outage has been delayed in completion.

Step 3.3 Primary Responsibility: Senior System Operator

Determine if the outage impacts must-run generation.

Step 3.3.1 Primary Responsibility: Senior System Operator

Condition(s) to perform this step:

- **The outage required must-run generation.**

Notify the Forecaster that the outage has been delayed in completion.

Notes

Forecaster will need to create a Manual Commitment in the Commitment Decision Processor (CDP) if the outage requires must-run generation.

Step 3.3.2 Primary Responsibility: Senior System Operator

Condition(s) to perform this step:

- **The outage required must-run generation.**

Notify the DE of the outage delay and must-run information.

Step 3.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission outage required a notification per M/LCC1 for a nuclear generator; Or**
- **The transmission outage required a post first contingency backdown for a nuclear plant.**

Notify Seabrook or Millstone 2 of the outage delay and any required information.

Notes

- The lowest value that the nuclear generator could potentially be dispatched to.
- Millstone 2 is the point of contact for outage notifications and for MIL2/3 combined backdown as well as MIL3 individual backdown per M/LCC 1 Attachment C

Step 3.4.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Outage Overrun overlaps with Risk Sensitive Maintenance (RSM); And**
- **Affected nuclear plant does NOT cancel the RSM application.**

Update the Risk Sensitive Maintenance outage request to document that the affected nuclear plant agrees that RSM work can proceed.

Step 3.4.1.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Seabrook is the affected nuclear plant.**

Request the nuclear DE provide documentation of the authorization to ISO and the applicable LCC and then attach it to the outage application.

Step 3.5 Primary Responsibility: Security Operator

Perform a security assessment for the outage using Section 6.

Step 3.5.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Notify the Operations Shift Supervisor and Senior System Operator of the security assessment results.

Step 3.5.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria cannot be maintained.**

Determine if approved non-implemented outages need to be postponed due to the overrun.

Notes

Overlaps with non-implemented transmission outages beyond the NEXT operating day will be evaluated by the STOC Group.

Step 3.5.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Determine if recalling an existing outage will alleviate potential exceedances.

Step 3.5.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An implemented transmission outage will be recalled.**

Recall the transmission outage using Section 10.

Step 3.6 Primary Responsibility: Operations Shift Supervisor

Condition(s) to perform this step:

- **An outage is NOT expected back at its planned end time and requires a special study due to a potential overlap with a non-implemented outage for either the CURRENT or NEXT operating day.**

Notify the Real Time Studies On-Call Engineer of the outage delay and overlapping information.

Notes

Overlaps with non-implemented transmission outages beyond the NEXT operating day will be evaluated by the STOC Group.

Step 3.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An outage is NOT expected back at its planned end time on that day, is expected back after 2400, and could present light load concerns (e.g., DARD pump restrictions, high voltage).**

Perform a security assessment for the outage for minimum load hour using Section 6.

Step 3.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An outage is NOT expected back at its planned end time on that day and is expected to be back after 2400.**

Overrun the outage application.

Instructions

Overrun by:

- ❑ Clicking the "Overrun" button
- ❑ Entering the Estimated time of return in the Short Term ISO Study Summary
- ❑ Modify the Planned end date and time.

Step 3.9 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage is an Intra-Area tie between two LCCs: Or**
- **The equipment affects the Primary Restoration Path to Seabrook.**

Notify the applicable LCC of the outage delay.

Step 3.10 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Equipment associated to the outage is on the NPCC Area Facilities for Notification list.**

Notify the required RC/BAs of the outage delay.

Step 3.11 Primary Responsibility: Security Operator

Log the overrun.

Instructions

Use log entry: > OUTAGES > Extended [E]

Notes

- The "Description" field in the log entry is to identify a brief summary of the equipment that is OOS.
- When logging CROW outages that have been extended do NOT add any special characters to the CROW ID or Description blocks, i.e. dashes, commas, parenthesis…etc., it may cause the daily report to fail.
- It is not required to log the overrun of a Relay/Comm/DNR outage UNLESS it contains guidance from the RTS Group.

Step 3.12 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **A profiled outage has been changed to continuous; Or**
- **A profiled outage will remain out-of-service for one or more planned in service periods.**

Log the change in outage parameters.

Instructions

- ❑ Use Log Entry: > OUTAGES > Changed from Profiled to Continuous [E];
- ❑ In the "Description" field, enter the details regarding the change to in service and out-of-service dates and times
  - ❑ Be as detailed as possible to ensure that the outage coordinators can adjust the CROW application correctly if a different control room staff is on shift when they work on it.
- ❑ In the dropdown box titled "CROW App Updated" select "yes" or "no"

Notes:

- If the changes are only affecting the "real time" outage window (i.e. in day and/or the next operating day), the control room staff should alter the CROW application.
- Normally the Short Term Outage Coordination Group will make adjustments to the CROW application if the outage period affected is outside of "real time", however the control room operators have the authority to modify already approved CROW applications if the situation dictates.

Condition(s) to perform this section:

- **LCC Operator has requested to restore a transmission outage.**

Section 4: Completed Outage

Step 4.1 Primary Responsibility: Security Operator

Review the outage application.

Instructions

While reviewing the outage application determine the following:

- ❑ How the equipment will be returned to service, this may include an associated switching application.
- ❑ Generation limitations associated with restoring the transmission equipment
- ❑ Outage Completion Actions
- ❑ For profiled outages if it is completed for the day or entirely completed.

Step 4.1.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Equipment to be restored has shared ownership between 2 or more LCCs; Or**
- **Equipment to be restored has an impact on another RC area.**

Notify other affected LCC(s) or RC/BA.

Instructions

- ❑ Communicate the following
  - ❑ Equipment to be restored
  - ❑ Request a reliability assessment and a call back with results.

Step 4.2 Primary Responsibility: Security Operator

Determine if there are any TOG's associated with the transmission equipment.

Step 4.3 Primary Responsibility: Security Operator

Perform a security assessment for the outage using Section 6.

Step 4.3.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Notify the Operations Shift Supervisor and Senior System Operator of the security assessment results.

Step 4.3.2 Primary Responsibility: Operations Shift Supervisor

Notify the Senior System Operator and Security Operator of the decision to approve or deny the request to restore the transmission equipment.

Step 4.3.2.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment restoration has been denied.**

Proceed to Step 4.5.

Step 4.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment restoration has been approved.**

Perform the following for the approval to restore the transmission equipment outage application.

Step 4.4.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment restoration limits a Scheduling Interface.**

Notify the Generation Operator of Scheduling Interface Total Transfer Capability (TTC) limitations and when to be implemented.

Step 4.4.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment TOG requires specific generation to be off-line for switching and the specific generation is on-line and the shutdown of the specific generation does NOT cause a reliability problem.**

Notify the Loader Operator of the specific generation or DARD pumps that are required to be off-line for the transmission equipment restoration.

Step 4.4.2.1 Primary Responsibility: Operations Shift Supervisor

Condition(s) to perform this step:

- **On-line Generation has DA Commitment, MinRun time remaining or is Self-Scheduled.**

Consult with Operations Management to determine if on-line generation should be shutdown to restore transmission equipment.

Step 4.4.2.1.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **On-line Generation will not be shutdown.**

Proceed to Step 4.5.

Step 4.4.2.2 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- **On-line Generation does not have a DA Commitment, MinRun time remaining or Self-Schedule; Or**
- **Operations Shift Supervisor has authorized restoration.**

Notify DE and issue shutdown of identified generation or DARD pumps using CROP.36003 Commitment De-Commitment Self-Scheduling and Self-Dispatch.

Step 4.4.3 Primary Responsibility: Security Operator

Notify the LCC Operator of the approval to restore the outage application.

Step 4.4.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The LCC has been given approval to restore the outage and restoration has commenced.**

Verify RTNET topology following a status change for transmission equipment.

Step 4.4.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage requires an adjustment of RTNET to return the equipment to service in the model.**

Adjust RTNET to restore equipment in the model.

Instructions

Adjust the following for the corresponding equipment:

- ❑ Line Segments / Transformer:
  - ❑ Select the "Remove" check-box from the RTNET > LINE > Network Line / Transformer summary
- ❑ Line Segments / Transformers/Misc Equipment:
  - ❑ Adjust RTNET devices using the One-Line display
- ❑ Capacitors / Reactors:
  - ❑ From the RTNET > CAP > Network Capacitor / Reactor Summary - Select the "Remove" check-box
  - ❑ From the RTNET > ISO RRM > Capacitive / Reactive Reserve displays - Select the "Ignore" check-box

Step 4.4.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The LCC Operator reports that the outage is complete.**

Enter the completion time for the outage in the ISO Outage Scheduling software.

Instructions

For a Completed outage:

- ❑ Click the "Complete Outage" button and enter the required information.

For a Completed profiled Outage:

- ❑ Click the "Complete Outage" button
- ❑ Toggle "Entire Outage" or "Current Daily Outage" whichever is applicable
- ❑ Enter the required information
- ❑ Click "Complete Outage"

For a Recalled outage:

- ❑ Click the "Recall" button and enter the required information.

Step 4.4.6.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment outage affected an Interface limit in ILC.**

Verify the Interface limit updates for the transmission equipment return to service.

Step 4.4.6.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An ILC limit was overridden and a manual limit was entered.**

Remove manual ILC limits.

Step 4.4.6.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Boundary line was skipped for an Interface.**

Restore any boundary lines that were skipped for an Interface in ILC.

Step 4.4.6.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Configuration modifications in ILC were required due to the transmission equipment outage.**

Remove configuration modifications in ILC.

Step 4.4.6.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment is on the NPCC Area Facilities for Notification list.**

Notify applicable RCs/BAs that the transmission equipment is back in service and the outage is complete.

Step 4.4.6.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **A constraint was activated for the transmission equipment outage.**

Close the associated constraint in CLOGGER per CROP.34006 Clogger Transmission Constraints and EMSOUT.

Step 4.4.6.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Must run generation is on-line for the transmission equipment outage.**

Notify the Loader Operator that the must run generation is no longer required.

Step 4.4.6.7.1 Primary Responsibility: Loader Operator

Notify the DE and shutdown the applicable generation using CROP.36003 Commitment De-Commitment Self-Scheduling and Self-Dispatch.

Step 4.4.6.7.2 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- **Actions have been taken to shutdown must run generation.**

Notify the Forecaster that the must run generation is no longer required and is being shutdown.

Step 4.4.6.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment limits a Scheduling Interface.**

Notify the Generation Operator the outage is complete and remove the Scheduling Interface Total Transfer Capability (TTC) limitations.

Instructions

- ❑ If the outage was scheduled to end for the current day but is earlier than anticipated:
  - ❑ Remove the Scheduling Interface TTC limitations.
- ❑ If the outage was scheduled beyond the current operating day and the DAM has **NOT** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the CURRENT DAY only.
- ❑ If the outage was scheduled beyond the current operating day and the DAM **HAS** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the current AND next operating day.

Step 4.4.6.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service.**

Notify the Generation Operator that the transmission equipment outage is complete and the generation or DARD pumps that were restricted or placed out-of-service can return to bid.

Step 4.4.6.8.1 Primary Responsibility: Generation Operator

Perform section "Completed Outage" of CROP.32002 Generation Outages.

Step 4.4.6.8.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Resource restriction did not have an associated ILC Interface or restriction; And**
- **A value was entered in the "Gen MW Alarm (Mw) well on the Unit Limits Page.**

Remove the "Gen MW Alarm (Mw)" value on the Unit Limits Page for the Resource.

Step 4.4.6.9 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The DE of a nuclear generator was notified of a potential backdown.**

Notify Seabrook or Millstone 2 that the outage, which created the potential backdown condition has been completed.

Notes

Millstone 2 is the point of contact for MIL2/3 combined backdowns as well as MIL3 individual backdowns per M/LCC 1 Attachment C.

Step 4.4.6.9.1 Primary Responsibility: Security Operator

Log the notification.

Instructions

Use log entry: > GENERATION > NUCLEAR > Nuclear Plant Informed Backdown Conditions Cleared

Step 4.4.6.10 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required notification per M/LCC1 for a nuclear generator.**

Notify Seabrook or Millstone 2 of the outage completion.

Notes

Millstone 2 is the point of contact for MIL2/3 outage notifications per M/LCC1 Attachment C.

Step 4.4.6.11 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **TOG alarming was enabled for this outage and is no longer needed.**

Disable TOG Alarming on a device.

Instructions

Using CROP.34008 TOG Alarming in EMS, disable TOG alarming on devices where no longer needed.

Step 4.4.6.12 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage was completed more than one day early, that is NOT a Relay/Comm/DNR outage; Or**
- **If a Relay/Comm/DNR outage with guidance from the RTS Group that was completed more than one day early.**

Log the early completion.

Instructions

Use log entry: > OUTAGES > Completed Early [E]

Notes

Relay/Comm/DNR or Informational apps are not required to be logged as early completion. However, there may be instances where a Relay/Comm outage application may have guidance from the Real-Time Studies Group and STOC should be notified of its early completion.

Step 4.4.6.13 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage was returned for weather.**

Log the return due to weather.

Instructions

Use log entry: > OUTAGES > Returned for Weather [E]

Step 4.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment restoration has been denied.**

Perform the following for the denial to restore the transmission equipment outage application.

Step 4.5.1 Primary Responsibility: Security Operator

Notify the LCC Operator of the denial to restore the outage application and the reason.

Step 4.5.2 Primary Responsibility: Security Operator

Log the denial.

Instructions

Use log entry: > OUTAGES > Denied [E]

Step 4.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage completion was due to a delayed outage and was recalled.**

Return to Section 3 - Delay in the Completion of an Outage.

Step 4.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage completion was due to a new forced or emergency outage and was recalled.**

Return to Section 9 - New Emergency or Forced outage.

Condition(s) to perform this section:

- **Notified that an outage has been cancelled.**

Section 5: Cancelled Outage

Notes

Outages on shared equipment will often have multiple applications, which represent work by more than one company. Do not cancel applications that appear to be duplicates without concurrence with the LCC.

Step 5.1 Primary Responsibility: Security Operator

Cancel the outage in the ISO Outage Scheduling software.

Instructions

Update the outage application by:

- ❑ For an application that has been "Approved" but has **NOT** been implemented, toggle the "Cancel" status.
- ❑ For profiled outages:
  - ❑ Toggle "Entire outage"; Or
  - ❑ Toggle "Selected Outage Periods"
    - ❑ Set the flag for the applicable dates
- ❑ Enter appropriate comments in the comment field of the ISO Outage Scheduling software.

Step 5.2 Primary Responsibility: Security Operator

Notify Control Room Personnel that the outage has been cancelled.

Step 5.2.1 Primary Responsibility: Security Operator

Notify the Senior System Operator and Operation Shift Supervisor that the outage has been cancelled.

Step 5.2.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service.**

Notify the Generation Operator that the transmission equipment outage is cancelled and the generation or DARD pumps that were restricted or placed out-of-service can return to bid.

Step 5.2.2.1 Primary Responsibility: Generation Operator

Perform section "Cancelled Outage" of CROP.32002 Generation Outages.

Step 5.2.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment limits a Scheduling Interface.**

Notify the Generation Operator the outage is cancelled and remove the Scheduling Interface Total Transfer Capability (TTC) limitations.

Instructions

- ❑ If the outage was only for the current operating day:
  - ❑ Remove the Scheduling Interface TTC limitations.
- ❑ If the outage was scheduled beyond the current operating day and the DAM has **NOT** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the CURRENT DAY only.
- ❑ If the outage was scheduled beyond the current operating day and the DAM **HAS** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the current AND next operating day.

Step 5.2.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service; Or**
- **The transmission equipment limits a Scheduling Interface.**

Notify the Forecaster that the outage has been cancelled.

Step 5.2.5 Primary Responsibility: Senior System Operator

Condition(s) to perform this step:

- **The outage request required must run generation of a non-Fast Start resource.**

Determine if the must run generation can be cancelled using CROP.36003 Commitment De-commitment Self-Scheduling and Self-Dispatch.

Step 5.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Post first contingency backdown was required for a nuclear plant due to the outage; Or**
- **The outage required notification per M/LCC1.**

Notify Seabrook or Millstone 2 of the cancelled outage.

Notes

Millstone 2 is the point of contact for outage notifications and for MIL2/3per M/LCC 1 Attachment C

Step 5.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage request is an Intra-Area tie between two LCCs.**

Notify the applicable LCC of the cancelled outage.

Step 5.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment is on the NPCC Area Facilities for Notification List.**

Notify applicable RCs/BAs that the job has been cancelled.

Step 5.6 Primary Responsibility: Security Operator

Log the cancellation.

Instructions

Use log entry: > OUTAGES > Cancelled [E]

Notes

It is not required to log the cancellation of a Relay/Comm/DNR outage UNLESS it contains guidance from the RTS Group.

Section 6: Study an outage application

Step 6.1 Primary Responsibility: Security Operator

Perform a security analysis on a real time snapshot or the Peak Study case.

Step 6.1.1 Primary Responsibility: Security Operator

Modify the snapshot or Peak Study case in Powerflow for the outage being studied that reflects the switching state and the outage state.

Notes

The expectation is that the switching state for an outage is studied if it does **NOT** match the outage state.

Step 6.1.2 Primary Responsibility: Security Operator

Determine if any TOGs or specific actions from an Outage application are applicable and take those immediate actions.

Step 6.1.2.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Resource restriction does not have an associated ILC Interface.**

Update the "Gen MW Alarm (Mw)" value on the Unit Limits Page for the Resource.

Instructions

- ❑ Access the applicable TOG to determine the Generation Limit
- ❑ Enter the applicable limit into the "Generation Mw Alarm (Mw)" field on the resources unit limits page.

Step 6.1.3 Primary Responsibility: Security Operator

Run Powerflow and review the basecase for exceedances.

Step 6.1.3.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Exceedances exist in the Powerflow basecase.**

Adjust Powerflow case to clear exceedances.

Instructions

Adjust Powerflow case by:

- ❑ Using no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatching expected on-line and available off-line Fast Start generation.
- ❑ Identifying the need for Must Run generations; "Must Run" is identified when specific generation is required to satisfy OP-19 and MLCC15 – Attachment H criteria

Step 6.1.4 Primary Responsibility: Security Operator

Determine if the outage affects an ILC boundary line.

Step 6.1.4.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Directed to skip a boundary line per the applicable TOG; Or**
- **Directed to skip a boundary line per the applicable outage application.**

Skip boundary line(s) for the applicable ILC Powerflow interface(s).

Step 6.1.5 Primary Responsibility: Security Operator

Run ILC Powerflow and review the solution for exceedances.

Step 6.1.5.1 Primary Responsibility: Security Operator

Verify the Interface limit(s) in ILC updates for the equipment going out-of-service.

Step 6.1.5.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The Interface limit(s) in ILC did NOT update for the equipment going out-of-service.**

Determine the ILC Powerflow limit(s) and update as necessary.

Step 6.1.5.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Exceedances exist in ILC Powerflow.**

Adjust Powerflow case to clear exceedances.

Instructions

Adjust Powerflow case by:

- ❑ Use no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatch expected on-line and available off-line Fast Start generation.
- ❑ "Must Run" is identified when specific generation is required to satisfy OP-19 and MLCC15 - Attachment H criteria.

Step 6.1.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Case desired for future review or study.**

Save the Powerflow case in the outage state.

Instructions

Save as new uniquely identified case.

Step 6.1.7 Primary Responsibility: Security Operator

Run STCA and review the solution for exceedances.

Instructions

Select the applicable STCA Options from the dashboard for the study.

Step 6.1.8 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **STCA indicated the outage potentially can create or worsen an exceedance.**

Remove the identified contingent element from service in Powerflow.

Step 6.1.8.1 Primary Responsibility: Security Operator

Adjust Powerflow case to clear exceedances.

Instructions

For all identified exceedances in STCA adjust the Powerflow case by:

- ❑ Using no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatching expected on-line and available off-line Fast Start generation.
- ❑ Calculating Adjustment Factors
- ❑ Determining if sufficient mitigating actions are available to maintain OP-19 and MLCC15 - Attachment H criteria
- ❑ Identifying the need for Must Run generations; “Must Run” is identified when specific generation is required to satisfy OP-19 and MLCC15 - Attachment H criteria.

Step 6.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Outage application indicated a TTC is affected; Or**
- **Study indicated that the TTC could be affected.**

Determine the effect the outage will have on a Scheduling Interface Total Transfer Capability (TTC).

Step 6.2.1 Primary Responsibility: Security Operator

Modify a real time snapshot in Powerflow for the outage being studied to reflect the outage state.

Step 6.2.2 Primary Responsibility: Security Operator

Modify generation in Powerflow to the existing Import or Export TTC.

Notes

The generation pattern used can directly affect the TTC calculation.

Step 6.2.3 Primary Responsibility: Security Operator

Run Powerflow and review the basecase for exceedances.

Step 6.2.3.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Exceedances exist in the Powerflow basecase.**

Adjust Powerflow case to clear exceedances.

Instructions

Adjust Powerflow case by:

- ❑ Using no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatching expected on-line and available off-line Fast Start generation.
- ❑ Identifying the need for Must Run generations; "Must Run" is identified when specific generation is required to satisfy OP-19 and MLCC15 - Attachment H criteria

Step 6.2.4 Primary Responsibility: Security Operator

Run ILC Powerflow and review the solution for exceedances.

Step 6.2.4.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Exceedances exist in ILC Powerflow.**

Adjust Powerflow case to clear exceedances.

Instructions

Adjust Powerflow case by:

- ❑ Using no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatching expected on-line and available off-line Fast Start generation.
- ❑ Identifying the need for Must Run generations; "Must Run" is identified when specific generation is required to satisfy OP-19 and MLCC15 - Attachment H criteria

Step 6.2.5 Primary Responsibility: Security Operator

Run STCA and review the solution for exceedances.

Instructions

Select the applicable STCA Options form the dashboard for the study.

Step 6.2.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **STCA indicated the outage potentially can create or worsen an exceedance.**

Remove the identified contingent element from service in Powerflow.

Step 6.2.6.1 Primary Responsibility: Security Operator

Adjust Powerflow case to clear exceedances.

Instructions

For all identified exceedances in STCA adjust the Powerflow case by:

- ❑ Using no cost options (Phase shifters, weather sensitive limits, use of RAS/ACS, preplanned circuit switching, use of reactive control devices, etc.).
- ❑ Re-dispatching expected on-line and available off-line Fast Start generation.
- ❑ Calculating Adjustment Factors
- ❑ Determining if sufficient mitigating actions are available to maintain OP-19 and MLCC15 - Attachment H criteria
- ❑ Identifying the need for Must Run generations; "Must Run" is identified when specific generation is required to satisfy OP-19 and MLCC15 - Attachment H criteria.

Step 6.2.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Transmission element or resource is listed on the NE-NB Voltage Calculator or Highgate Export Voltage Calculator.**

Configure the Double C Voltage Reactive Study display to determine the export TTC limit per CROP.34001 Double C.

Notes

Resources in New Brunswick may have an associated transmission outage application in order to track any interface restrictions due to the outage.

Step 6.2.7.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The NE-NB Voltage Calculator V/R Limit Status says "ERROR"; Or**
- **The NE-NB Voltage Calculator V/R Limit Status says "OK" with a Study limit of -99999 or 99999 WITHOUT a corresponding indication of a "Minimum NB-NE Requirement" value.**

Contact the RTS On-Call Engineer to provide a limit or course of action .

Notes

- Too many facilities out-of-service may inhibit the voltage calculator from providing a limit and RTS guidance will be needed in order to provide a limit or directions to make the voltage calculator function properly.
- As a backup, there is an off-line version of the NE-NB Voltage calculator in ODMS that may also be used as a backup or if the EMS version is not available.

Step 6.2.7.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Offline NENB VR Calculator is being used and is displaying "Too many facilities are out of service Needs voltage / reactive special study.".**

Contact the RTS On-Call Engineer to provide a limit or course of action.

Step 6.2.8 Primary Responsibility: Security Operator

Determine the TTC value based on the Powerflow, ILC Powerflow, STCA or Double C Voltage Reactive Study results.

Step 6.3 Primary Responsibility: Security Operator

Determine the effects the outage will have on Double C.

Step 6.3.1 Primary Responsibility: Security Operator

Verify the applicable nightly Double C studies reflected the outage.

Step 6.3.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The applicable nightly Double C study did NOT reflect the outage.**

Calculate a Double C transfer limit per CROP.34001 Double C.

Step 6.3.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The applicable nightly Double C study did NOT reflect the outage.**

Configure the Double C Area Study display to determine the Proxy Limit per CROP.34001 Double C.

Return to Section 1 - Approved Outage
Return to Section 3 - Delay in the Completion of an Outage
Return to Section 4 - Completed Outage
Return to Section 9 - New Emergency or Forced Transmission Outage
Return to Section 11 – Change an outage Scope of Work

Condition(s) to perform this section:

- **Notified by a LCC Operator that the START of an outage will be delayed**

Section 7: Notification of a delay in the start of an Outage

Notes

Actions within this section are performed when an LCC Operator has notified ISO-NE that a transmission outage will NOT be started and the start and/or end date within the application needs to be modified to a different day. Adjustments to the end date/time without an alternate date identified or beyond the alternate date should **NOT** be performed as this will affect the priority level of the outage application. STOC will review the application and determine what actions need to be taken.

Step 7.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Outage START is delayed to a time that is still within the approved outage window HOWEVER, the end date will now extend beyond the previously approved outage date with NO alternate date identified or it is beyond the alternate date.**

Inform the LCC Operator that the request will be forwarded to the STOC Group and that they may need to re-apply.

Step 7.1.1 Primary Responsibility: Security Operator

Update the new start time of the outage application as communicated by the LCC.

Notes

The end date of the outage should **NOT** be changed by the System Operator. The requested outage end date will be evaluated by the STOC Group and updated if approved.

Step 7.1.2 Primary Responsibility: Security Operator

Log the delay.

Instructions

- ❑ Use log entry: > OUTAGES > Delayed / Rain Date [E]
- ❑ Enter the following:
  - ❑ CROW ID
  - ❑ Description of the delay and any pertinent information i.e. equipment information and reason delayed
  - ❑ Identify the anticipated end time given by the LCC in the comments section

Step 7.1.3 Primary Responsibility Security Operator

Proceed to Step 7.4.

Step 7.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Outage start and/or end dates are still WITHIN the previously approved outage dates; Or**
- **Outage has an alternate date.**

Step 7.2.1 Primary Responsibility: Security Operator

Update the outage application with the new information.

Step 7.2.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The Alternate Date is being utilized.**

Set the flag next to the "Alternate Date(s): field".

Step 7.2.3 Primary Responsibility: Security Operator

Log the delay.

Instructions

- ❑ Use log entry: > OUTAGES > Delayed / Rain Date [E]
- ❑ Enter the following:
  - ❑ CROW ID
  - ❑ Description of the delay and any pertinent information i.e. equipment information and reason delayed.

Step 7.2.4 Primary Responsibility Security Operator

Proceed to Step 7.4.

Step 7.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Outage start and end dates are BOTH outside the previously approved outage dates WITHOUT an alternate date.**

Confirm with the LCC Operator that they are requesting to cancel the outage application and that they will re-apply.

Step 7.3.1 Primary Responsibility: Security Operator

Cancel the outage in the ISO Outage Scheduling software using Section 5.

Step 7.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage request is an Intra-Area tie between two LCCs.**

Notify the applicable LCC Operator of the outage delay.

Step 7.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment is on the NPCC Area Facilities for Notification list.**

Notify applicable RCs/BAs of the outage delay.

Step 7.6 Primary Responsibility: Security Operator

Notify Control Room Personnel that the outage has been delayed.

Step 7.6.1 Primary Responsibility: Security Operator

Notify the Senior System Operator and Operation Shift Supervisor that the outage has been delayed.

Step 7.6.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service.**

Inform the Generation Operator of the generation or DARD pumps that were restricted or out-of-service due to the outage.

Step 7.6.2.1 Primary Responsibility: Generation Operator

Notify the DE that the generation or DARD pump restriction or removal from service is delayed and perform the applicable redeclaration using CROP.36002 Redeclarations.

Step 7.6.2.2 Primary Responsibility: Generation Operator

Updated the corresponding TCD outage application with the new date(s)/time(s).

Step 7.6.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The transmission equipment limits a Scheduling Interface.**

Notify the Generation Operator the outage is delayed and remove the Scheduling Interface Total Transfer Capability (TTC) restrictions.

Instructions

- ❑ If the outage was only for the current operating day:
  - ❑ Remove the Scheduling Interface TTC limitations.
- ❑ If the outage was scheduled beyond the current operating day and the DAM has **NOT** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the CURRENT DAY only.
- ❑ If the outage was scheduled beyond the current operating day and the DAM **HAS** been finalized:
  - ❑ Remove the Scheduling Interface TTC limitations for the current AND next operating day.

Step 7.6.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage required generation or DARD pumps to be restricted or placed out-of-service; Or**
- **The transmission equipment limits a Scheduling Interface.**

Notify the Forecaster that the outage has been delayed.

Step 7.6.5 Primary Responsibility: Senior System Operator

Condition(s) to perform this step:

- **The outage request required must run generation of a non-Fast Start resource.**

Determine if the must run generation can be cancelled using CROP.36003 Commitment De-commitment Self-Scheduling and Self-Dispatch.

Step 7.7 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Post first contingency backdown was required for a nuclear plant due to the outage; Or**
- **The outage required notification per M/LCC1.**

Notify Seabrook or Millstone 2 of the delay and updated outage information.

Notes

Millstone 2 is the point of contact for outages and MIL2/3 combined backdowns as well as MIL3 individual backdowns per M/LCC 1 Attachment C.

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Condition(s) to perform this section:

- **Notified by a LCC Operator that an outage will be returning early and must be profiled; Or**
- **As Directed by Section 10 due to recalling a transmission outage for reliability and must be profiled.**

Section 8: Outage returning early and must be profiled

Step 8.1

Primary Responsibility: Security Operator

Profile the outage application.

Instructions

NOTE: The actions below should be performed in order to prevent any errors

To Profile an outage application, perform the following:

- ❑ Record the original Implementation and Planned End time and click the "Clear Implementation" button.
- ❑ Change the outage to "Non-Continuous".
- ❑ From the "Request Details/Approval" tab change the "Planned End" to the date the outage will return to service for weather or other reason, then click "Return".
- ❑ Click "Add" to create a new profile for the Outage.
- ❑ Modify the Planned End date/time to the original Planned End date/time recorded and click "Return".
- ❑ Modify the Planned Start date/time to when the Outage will be taken back out-of-service.
- ❑ Continue to add profiles in accordance with the LCC's instructions.
- ❑ If the LCC wants the end date to extend beyond the original end date, perform Section 3 of this CROP.

❑ Save changes and re-implement the Outage using the Original implementation time recorded.

Step 8.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Reason for transmission outage profiling was due to being recalled.**

Return to Section 10.

Step 8.3

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Reason for transmission outage profiling was due to a reason other than being recalled.**

Log profiling the outage.

Instructions

Use Log Entry: > OUTAGES > Changed from Continuous to Profiled [E]

Step 8.4

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **LCC Operator has requested to return the outage.**

Complete the outage using Section 4.

Condition(s) to perform this section:

- **Notified by a LCC of a new emergency or forced transmission outage application.**

Section 9: New Emergency or Forced Transmission Outage

Notes

- If Real Time conditions allow, the outage application should be approved by the Security Operator and will be finalized by the STOC Group.
- Overlaps with non-implemented transmission outages beyond the NEXT operating day where the Day Ahead has NOT been finalized will be evaluated by the STOC Group.

Step 9.1 Primary Responsibility: Security Operator

Review the outage application.

Step 9.2 Primary Responsibility: Operations Shift Supervisor

Condition(s) to perform this step:

- **When a defined interface has a voltage/stability limit for one or more elements out-of-service and then an additional element on the specified interface is removed from service; Or**
- **When a defined interface has a voltage/stability limit for one or more elements out-of-service and then the limiting contingency for which the interface limit is based occurs; Or**
- **When an element that is part of a TOG goes OOS and overlaps with an existing element OOS from that TOG and requires a RTS evaluation.**

Notify the Real Time Studies On-Call Engineer of the outage.

Step 9.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Affected equipment is located at a station listed in OP-24 Appendix C.**

Determine if any high-speed protection/relay/communication equipment is impacted.

Instructions

- ❑ Attach OP-24 Appendix D to CROW application
- ❑ Review OP-24 Appendix D questions 4-8 with LCC to determine if 'compromised system' criteria met.
- ❑ If the answer to any question is "No" then:
  - ❑ Contact the RTS On-Call Engineer
  - ❑ Instruct the LCC to complete the remaining OP-24 Appendix D information by the end of the next business day.
- ❑ If the answer to any question is "N/A" Real Time Studies (RTS) notification is not needed.

Notes

A 'compromised system' is met if any response to above questions is "No".

Step 9.3.1 Primary Responsibility: Security Operator

Determine if there are any TOG's associated with the high speed protection/relay/communication equipment.

Step 9.3.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The high-speed protection/relay/communication equipment involves a 345kV line.**

Evaluate the remaining high speed protection/relay/communication equipment and take the applicable actions if required.

Instructions

If **BOTH** channels of high speed protection/relay/communication equipment are OOS:

- ❑ If applicable; Take the actions identified by the RTS Group in the CROW application for loss of the remaining high-speed protection/relay/communication equipment for the identified line; Or
- ❑ Return to service one of the two high-speed protection systems; Or
- ❑ Remove the affected 345kV line from service.

Notes

Actions must be completed within 30 minutes of receiving the notification of the failed high-speed protection/relay/communication equipment per MLCC 15.

Step 9.4 Primary Responsibility: Security Operator

Annotate any applicable information in the CROW application.

Instructions

- ❑ If a TOG is applicable, reference the applicable TOG in the Short Term ISO Study Summary;
- ❑ On the Studies Tab at a minimum apply any applicable flags for “External Interface Restriction”, “Internal Interface Restriction”, “Generation Limitations” or “Generation Must Runs”;
- ❑ Reference any Special Study guidance in the Short Term ISO Study Summary.

Step 9.5 Primary Responsibility: Security Operator

Determine if the outage impacts a Primary or Alternate Restoration Path identified in M/LCC 18.

Notes

Refer to M/LCC 7 for information regarding overlaps of **BOTH** Primary and Alternate Restoration Paths to Nuclear Power Stations.

Step 9.5.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The outage impacts a Primary or Alternate Restoration Path.**

Notify the Operations Shift Supervisor and Senior System Operator.

Step 9.6 Primary Responsibility: Security Operator

Perform a security assessment for the outage using Section 6.

Step 9.6.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Notify the Operations Shift Supervisor and Senior System Operator of the security assessment results.

Step 9.6.2 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Determine if approved non-implemented outages need to be postponed due to the new emergency or forced outage.

Step 9.6.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **OP-19 normal criteria or MLCC15 - Attachment H Criteria cannot be maintained.**

Determine if recalling an existing outage will alleviate potential exceedances.

Step 9.6.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An implemented transmission outage will be recalled.**

Recall the transmission outage using Section 10.

Step 9.7 Primary Responsibility: Security Operator

Verify "Outage Priority:" is set appropriately.

Instructions

For transmission equipment outages modeled in EMS:

- ❑ Outage Priority should be set to "Emergency" or "Forced".

For RLY/COM outages:

- ❑ Outage Priority should be set to "Informational".

Notes

If needed, refer to OP-3 to determine if the outage is Forced or Emergency.

Step 9.8 Primary Responsibility: Security Operator

Approve the outage application.

Instructions

When prompted, set the Market Sensitive Flag as appropriate.

Notes

An outage request is deemed Market Sensitive if the outage takes a line or piece of equipment out-of-service that would remove a resource from service.

Step 9.9 Primary Responsibility: Security Operator

Log the new transmission outage.

Instructions

- ❑ Use log entry: > OUTAGES > New Emergency App [E] or New Forced App [E]
- ❑ Enter the following information:
  - ❑ CROW ID;
  - ❑ A description of the outage that includes the element name or line number;
  - ❑ If the outage requires must run generation or generation reductions.

Step 9.10 Primary Responsibility: Security Operator

Proceed to Section 1 for the approved outage application.

Condition(s) to perform this section:

- **Transmission outage is being recalled for reliability; Or**
- **Received notification from an LCC that a Transmission outage is being recalled.**

Section 10: Recalling a Transmission Outage

Step 10.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Recalled outage is being initiated by the ISO.**

Notify the LCC of the transmission outage to be recalled.

Step 10.1.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage request is an Intra-Area tie between two LCCs.**

Notify the affected LCC of the outage being recalled.

Step 10.1.2

Primary Responsibility: Security Operator

Log the recall.

Instructions

Use log entry: > OUTAGES > Transmission Outage Recall [E]

Step 10.1.3

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **ISO New England and the LCC have agreed to a recall time longer than what is declared in the CROW application.**

Update Transmission Outage Recall log entry comments field with agreed upon recall time.

Step 10.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Notified by an LCC that they will be recalling a transmission outage for a reason other than weather.**

Log the recall.

Instructions

Use log entry: > OUTAGES > Transmission Outage Recall [E]

Notes

Outages recalled due to weather will be logged in Section 4.

Step 10.2.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The equipment for the outage request is an Intra-Area tie between two LCCs.**

Notify the affected LCC of the outage being recalled.

Step 10.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **An implemented outage is being recalled and must be profiled.**

Profile the outage application using Section 8.

Step 10.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **LCC Operator calls to return the outage.**

Complete the outage using Section 4.

Condition(s) to perform this section:

- **An LCC reports a change in the scope of work for an Approved or Implemented outage.**

Section 11: Change an outage Scope of Work

Step 11.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Topology for an outage will be different from the approved and studied CROW application.**

Inform the LCC that the new topology will be studied and a determination will be made regarding the change.

Instructions

- ❑ Study the new topology using Section 6 of this CROP
- ❑ Inform the Senior System Operator and Shift Supervisor.

Step 11.1.1

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The affected outage application included an Intra-LCC tie prior to the change in scope of work; Or**
- **The affected outage application includes an Intra-LCC tie under the new scope of work.**

Inform the other affected LCC of the new topology and request a reliability assessment be performed.

Step 11.1.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **The affected outage application included transmission equipment on the NPCC Area Facilities for Notification list prior to the change in scope of work; Or**
- **The affected outage application includes transmission equipment on the NPCC Area Facilities for Notification list under the new scope of work.**

Notify the applicable RC/BA of the new scope of work and request a reliability assessment be performed, if applicable.

Step 11.2

Primary Responsibility: Operations Shift Supervisor

Determine if the change in the scope of work can be allowed under the current outage request or if a new planned, forced or emergency outage application will be needed.

Instructions

- ❑ Use M/LCC7 and OP3 to determine if or how the outage can proceed;
- ❑ If necessary, consult with the Manager, Control Room Operations, Lead Operations Shift Supervisor, Real Time Studies Group and/or Short Term Outage Coordination Group;
- ❑ Inform the Security Operator how to proceed with the outage and CROW application.

Condition(s) to perform this section:

- **A significant change has been made to an Approved or Implemented outage application.**

Section 12: Changes to Approved or Implemented outage applications

Notes

Significant changes to outages can include but are not limited to:

- Modification to "Must Run" requirements
- Newly added or modifications to attached guidance
- Modifications to Study Notes
- Modifications to "Equip. Requested:" field
- Modifications to "External Interface Restriction" or "Internal Interface Restriction"

Step 12.1

Primary Responsibility: Security Operator

Notify the applicable LCC(s) and/or RC(s) of the changes to the Approved or Implemented outage application.

Notes

The Control Room will perform notifications for changes of Approved outages within the Current Operating day and the Next Operating Day after the Next Day Peak Case has been turned over to the Control Room, (typically 1300).

Step 12.2

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Topology for an outage will be different from the approved and studied CROW application and requires a RTS evaluation; Or**
- **Topology change for an outage impacts a TOG.**

Notify STOC and/or RTS Group of the equipment added/removed/modified within the "Equip. Requested:" field.

Step 12.3

Primary Responsibility: Security Operator

Verify the "Continuous/Daily" field in the CROW application is appropriately selected.

Notes

- An unknown error in the CROW application where adjustments to the "Equip. Requested:" field may cause the "Continuous/Daily" field to change the profile of the outage application.
- The Operator may have to utilize the "History" field within the CROW application to make this determination.

Step 12.4

Primary Responsibility: Security Operator

Condition(s) to perform this step:

- **Equipment was added, removed or modified in the "Equip. Requested:" field; And**
- **The outage is scheduled beyond the current operating day.**

Log the update to the CROW application.

Instructions

Use log entry: > OUTAGES > Equipment Modified [E]

Revision History

Rev. No.	Date (MM/DD/YY)	Reason	Contact
--	04/09/21	For previous revision history, refer to Rev 22 available through Ask ISO	Steven Gould
23	10/04/21	Updated Common Procedure Information. Added Instructions to Step 9.3, and added Step 9.3.1, added logging requirement to step 9.9, modified section 8 to remove instruction to send profiled outages to STOC group and added logging requirement.	Steven Gould
24	01/24/22	Added section 12, added clarification in step 1.3 regarding management expectations of CROW administration, Added step 4.1.1, Added to step 10.3.1, updated section 4 and section 11 with additional instructions when recalling an outage.	Steven Gould
25	05/26/22	Updated Table of Contents, Added conditions to enter for Step 4.4.6.12; Added information to Background information, Updated References, Added Note to Step 1.6.8; Added clarifying instructions to Step 4.6, Step 4.4.6.8, Step 5.1 and Step 5.2.3; Moved old Section 10 to CROP.10004 Implement Transmission Remedial Actions	Jonathan Gravelin
26	9/13/22	Deleted Step 1.6.9 it was duplicate of 1.4, Added notes to Step 2.8, Added Step 9.3.2, Deleted Steps 9.5 & 9.6 they are performed in Section 1. Added Instruction to Step 7.6.3	Jonathan Gravelin
27	01/03/23	Added Section 12 as a requirement from MLCC13. Added Condition to enter in Steps 1.3 & 3.9; Updated Step 9.3 Instructions; Updated Notes in Step 3.11 & 5.6	Jonathan Gravelin
28	05/09/23	Modified Condition to Enter for Step 6.2.6; Added Steps 6.2.6.1, 6.2.6.2 & 1.1.1	Jonathan Gravelin
29	7/27/23	Added Step 2.8	Jonathan Gravelin
30	10/26/23	Added Step 1.6.8.3, 4.4.6.8.2 and 6.1.2.1; Added Condition to Enter in Step 9.2;	Jonathan Gravelin
31	01/03/24	Updated References, Added Condition to Enter for Step 10.1; Added Step 4.5, 4.5.1, 7.2.2, 10.1.1, 10.2, 10.2.1, and 12.3; Added “MLCC15 – Attachment H” throughout document where appropriate, globally changed “SPS” to “RAS/ACS”	Jonathan Gravelin
32	04/29/24	Added Note to Step 1.1 and Section 12, Added information to Step 4.1, 4.1.1 and 12.1, Modified Step 9.4, Added Step 12.4, 6.5.1, 6.5.2, 9.5.1 and 1.7.5.2; removed condition to enter in 4.3.2	Jonathan Gravelin