

ISO newengland	CROP.34006 Clogger Transmission Constraints and EMSOUT	
© 2024	Approved By: Director, Operations	Effective Date: 09/17/2024
Rev # 10	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/17/2026

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References

1. OP19 – Transmission Operations

Procedure Background

The Security Operator performs surveillance of the Clogger software and compares it with RTNET and RTCA solutions. During surveillance, the Security Operator studies selected constraints presented to determine if they are valid constraints that require activation.

External unit contingencies in RTCA are for monitoring only and at **NO** time are any to be activated in Clogger

Constraints selected and activated in the CLOGGER software affect the dispatch of resources by providing input to UDS solution. Interface Constraints should **NOT** be activated in CLOGGER until an evaluation is performed on the effect of re-dispatching resources for the Interface Constraint vs. re-dispatching resources for a Reserve Zone Requirement.


Contingencies that result in one of the NY tie lines being the limiting element should **NOT** be activated in CLOGGER

If EMS Out software is in service, CLOGGER solution results could vary from RTCA solution results.

The statuses of RAS devices in the RTCA software affect the dispatch of resources by providing input to the CLOGGER solution.

The Security Operator has the ability to change the interface % tolerance for interface constraints, which will determine when the interface constraint will be presented in Study mode.

CLOGGER will present sensitivities for resources that have an effect on alleviating a constraint. UDS will only dispatch resources to respond to a constraint when the constraint is activated.

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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 communication.
- F. Primary responsibilities are stated for each step within the procedure, but any ISO System 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.

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Procedure

Condition(s) to perform this section:

- The Security Operator has determined a constraint needs to be activated in Clogger to dispatch resources to meet/maintain OP-19 criterion.

Section 1 : Activate a transmission constraint in Clogger

Notes

- No cost options have been utilized and exhausted, if available.
- Contingencies that result in one of the NY tie lines being the limiting element should **NOT** be activated in CLOGGER.
- When a new contingency is ready to be implemented in Real Time, it is **NOT** necessary to wait until the contingency is added to the Day Ahead Market before operations activates it in CLOGGER.
- Certain Interfaces of ILC have been blocked for activation in the CLOGGER software and can be found on the "Constraint Logger Exception List" in CLOGGER.

Step 1.1 Primary Responsibility: Security Operator

Notify the Senior System Operator and Operations Shift Supervisor that a constraint is going to be activated in Clogger.

Step 1.2 Primary Responsibility: Security Operator

Activate the specific constraint from the Clogger "Study_Constraints" display.

Instructions

To activate a constraint left click on the "STUDY" button and select "Activate".

Notes

Security constraints software does **NOT** account for all contingencies (E.g.,: A Generator may be limited to a certain MW output due to a certain transmission breaker configuration) and therefore, require the manual redeclaration of Generator limits in order to dispatch Generators/DARDS to maintain system reliability. This would be handled as an ISO Imposed Re-declaration.

Step 1.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:


- The contingency that was activated is based on a thermal rating and the Clogger default rating will NOT be dispatched to.

Select the "Rating Base" for a transmission limit on the Clogger "Active_Constraints" display.

Notes

Constraints based on thermal limits can be dispatched to the Normal, LTE or STE rating.

The "Rating Base" that is used when the constraint is activated is the same "Rating Base" shown on the "Study Constraints" display.

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Step 1.4 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- The default Bias (of 100) will NOT be used.

Enter the degree of response in the "Bias" well on the Clogger "Active_Constraints" display.

Notes

- The Bias % rating applied for the transmission constraint will determine the response of UDS in providing security constrained dispatch. The default is 100%. During periods of large load ramps the Bias % rating may require a value less than 95% to ensure operating limits are **NOT** violated. If actual line flows are lower than the value RTCA and CLOGGER are using, a Bias % rating above 100% may be warranted.
- Transmission constraints are developed in units of MVA but the UDS solves using units of MW. In cases of high MVAr the % rating applied for the transmission constraint response may need to be changed.
- CLOGGER currently does **NOT** recognize the NSTAR cable rating changes based on the NSTAR cable monitoring tool. Therefore, if the active constraint is for loss of one cable onto another in the same pair (and the ratings change when the cable trips), the % rating chosen will need to be based on the ratings displayed in RTCA.

Step 1.5 Primary Responsibility: Security Operator

Notify the Loader Operator of the constraint that was activated and the expected dispatch.

Notes

UDS will **NOT** account for the newly activated transmission constraint until the dispatch software case is executed and approved.

Step 1.6 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- LCC Operator was NOT informed prior to activating the constraint.

Notify the applicable LCC Operator(s).

Instructions

For RTNET constraints the notification must contain the following information:

- ☐ Limiting element
- ☐ Limiting element limit

For RTCA constraints the notification must contain the following information:

- ☐ Contingent element
- ☐ Limiting element
- ☐ Limiting element limit

For ILC constraints the notification must contain the following information:

- ☐ Interface
- ☐ Interface Limit

Step 1.7 Primary Responsibility: Security Operator

Log the constraint ID that was activated.

Instructions

Use log entry: > TRANSMISSION > Constraint Activated

[Return to Section 4](#) - Activate EMSOUT for an element section

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Condition(s) to perform this section:

- A transmission constraint is active and the Bias needs to be modified to maintain reliability; Or
- A transmission constraint is active and a Reserve Down flag needs to be modified.

Section 2 : Managing an Active transmission constraint.

Step 2.1 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- The Bias needs to be adjusted to change the effect on resource dispatch.

Adjust the Bias of an active constraint from the Clogger "Active_Constraints" display.

Step 2.2 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- The active constraint restricts a resource from being dispatched to its Eco Max or Max Reduction.

Set a Reserve Down flag on the required resource.

Step 2.2.1 Primary Responsibility: Loader Operator

Log setting the Reserve Down flag.

Instructions

Use log entry: > GENERATION > RESERVES > RESERVE MONITOR DOWN FLAG > Start

Step 2.3 Primary Responsibility: Loader Operator

Condition(s) to perform this step:

- A resource has a Reserve Down flag set and is no longer being restricted from being dispatched to its Eco Max or Max Reduction.

Remove the Reserve Down flag from a resource.

Step 2.3.1 Primary Responsibility: Loader Operator

Log removing the Reserve Down flag.

Instructions

Use log entry: > GENERATION > RESERVES > RESERVE MONITOR DOWN FLAG > End

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Condition(s) to perform this section:

- The condition requiring the transmission constraint to be active is no longer valid.

Section 3 : Close a transmission constraint in Clogger

Step 3.1 Primary Responsibility: Security Operator

Notify the applicable LCC Operator(s) that a constraint will be closed in Clogger and verify no further reliability need exists.

Notes

The LCC Operator is notified to ensure concurrence with closing the constraint.

Step 3.2 Primary Responsibility: Security Operator

Close the specific constraint from the Clogger "Active_Constraints" display.

Instructions

To close a constraint left click on the "Active" button and select "Close".

Step 3.2.1 Primary Responsibility: Security Operator

Log the constraint ID that was closed.

Instructions

Use log entry: > TRANSMISSION > Constraint Closed

Step 3.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- Reserve Down flag was applied only for the constraint that was closed.

Remove the Reserve Down flags associated with the closed constraint.

Step 3.3.1 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- A Reserve Down flag was removed.

Log removing the Reserve Down flag.

Instructions

Use log entry: > GENERATION > RESERVES > RESERVE MONITOR DOWN FLAG > End

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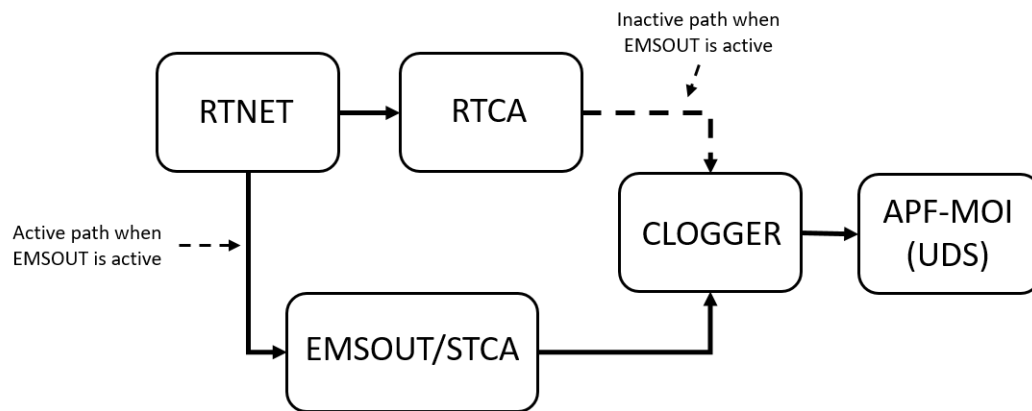
Condition(s) to perform this section:

- A transmission outage requires pre-dispatch of generation to maintain system reliability.

Section 4 : Activate EMSOUT for an element

Notes

After the “Activate Pre Outage Switching” has been activated and a subsequent RTCA solution has completed, the data source for CLOGGER changes from RTCA to EMSOUT. When the transmission element is removed in the EMSOUT Pre-Outage Switching display and RTNET software runs, the subsequent EMSOUT violations that occur from the removed element appear in CLOGGER. It should be noted that when the transmission element is removed in the EMSOUT Pre-Outage Switching display that RTNET solutions are now routed through EMSOUT instead of going from RTCA to CLOGGER. RTCA will **NOT** show contingencies produced by EMSOUT.



Step 4.1 Primary Responsibility: Security Operator
Access EMSOUT.


Instructions

Access EMSOUT by clicking the "SEC" dropdown menu arrow and clicking "EMSOUT".

Step 4.2 Primary Responsibility: Security Operator
Find the transmission element to be modeled out-of-service.

Step 4.3 Primary Responsibility: Security Operator
Toggle the “Remove” button for the element to be modeled as out-of-service.

Step 4.4 Primary Responsibility: Security Operator
Toggle the “Activate Pre Outage Switching” button to select the process to run with the next sequence.

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Step 4.5 Primary Responsibility: Security Operator

Activate the applicable transmission constraint in Clogger using [Section 1](#).

Notes

- When transmission elements are activated in EMSOUT an informational notice will flash on the CLOGGER display (AOL Pre-outage active).
- When using CLOGGER to implement a constraint provided from the use of EMSOUT the Security Operator should consider implementing a Bias % rating for the constraint (possibly > 100%) and then incrementally adjust in order to transition resources for the upcoming transmission outage and prevent infeasible solutions from occurring.

Step 4.6 Primary Responsibility: Security Operator

Log the element modeled out of service using EMSOUT.

Instructions

Use log entry: > TRANSMISSION > EMS OUT > Activated

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Condition(s) to perform this section:

- A transmission outage has been implemented, a constraint is active in CLOGGER and EMSOUT is no longer required.

Section 5 : Close an active EMSOUT event

Step 5.1 Primary Responsibility: Security Operator
Access EMSOUT.

Instructions

Access EMSOUT by clicking the "SEC" dropdown menu arrow and clicking "EMSOUT".

Step 5.2 Primary Responsibility: Security Operator
Find the Selected outage.

Instructions

Find the selected outages by clicking the "Selected Line Outages" display.

Notes

This ensures only the selected line outages are "unselected".

Step 5.3 Primary Responsibility: Security Operator
Toggle the “Remove” button to deselect the element being modeled out-of-service.

Step 5.4 Primary Responsibility: Security Operator
Run a Sequence.

Step 5.5 Primary Responsibility: Security Operator

Condition(s) to perform this step:

- No more elements are selected to be modeled out of service.

Toggle the “Active Pre Outage Switching” button to deselect the process from running.


Notes

Once the “Activate Pre-Outage Switching” button is untoggled in the AOL Pre-Outage Switching display and the transmission element has been removed in real-time the Security Operator should review the RTCA results for any constraints related to the outaged line and consider them for activation.

Step 5.6 Primary Responsibility: Security Operator
Log closing an EMSOUT event.

Instructions

Use log entry: > TRANSMISSION > EMS OUT > Closed

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Revision History

Rev. No.	Date (MM/DD/YY)	Reason	Contact
0	02/15/13	Initial Draft of this Procedure	Steven Gould
1	09/04/13	Add step 2.2.1 to specify making a log entry when setting a reserve monitor down flag.	Steven Gould
2	11/27/13	Section 1 - Modified the conditions to perform and Note Added Steps 1.6 and 3.1 for notifying applicable LCCs	Steven Gould
3	06/11/15	Modified note in step 1.4 for activating an NSTAR cable constraint in CLOGGER; Added specific log entry names; Removed the requirement to approve a non-binding UDS case to close a constraint.	Steven Gould
4	09/06/16	Added clarification for not activating contingencies in CLOGGER	Steven Gould
5	10/11/17	Administrative Format change	Steven Gould
6	08/29/18	Biennial Review	Steven Gould
7	02/04/20	Updated blocked interfaces in the background section Evaluated notes and instructions	Steven Gould
8	02/12/21	Updated EMSOUT button name in Step 4.4	Steven Gould
9	02/07/23	Biennial Review; Removed Lake Rd and Ocean State Generation Interface from Procedure Background due to EMS 3.2.7 update; Updated References, Updated Common Procedure Information; Updated drawing in Section 4	Jonathan Gravelin
10	09/11/24	Updated Procedure Background with removal of Mystic 8 & 9; Added a Note to Section 1.	Jonathan Gravelin