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	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0020	Revision Number: 21
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# SOP-OUTSCH.0030.0020

## Perform Short Term Outage Coordination


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## 1. Objective


The objective of this procedure is to document the responsibilities of ISO New England (ISO) staff with regard to transmission outage coordination. This involves the process of submitting each transmission outage to ISO, performing outage analysis with respect to system reliability and market efficiency, approving and disapproving each outage application and closing out an application when transmission work is completed.

This procedure describes the process of forecasting External Transfer Limits on a daily basis. An estimate is developed for the expected External Transfer Limits between ISO and each neighboring Reliability Coordinator Area/Balancing Authority Area (RCA/BAA).

This procedure also establishes estimated transfer limits and Reserve Zone requirements day-ahead based on transmission topology, system demand and generation. These estimates are conveyed using the Generation Requirements for Transmission (GRT) spreadsheet.

This procedure does not in any way change the intent of ISO New England Operating Procedure No. 3 - Transmission Outage Scheduling (OP-3) but rather is intended to clarify responsibilities delegated to ISO staff by OP-3.

Compliance with this procedure is necessary to support the reliable and cost-effective operation of the power system.

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## 2. Background

OP-3 establishes the procedure by which each Market Participant (MP), Local Control Center (LCC), and ISO interact to develop transmission equipment outage plans, both Long-term (> 21 days in advance) and Short-term (21 days in advance to the Operating Day).

As the date of a proposed outage is confirmed, the applicable LCC along with applicable neighboring Reliability Coordinator/Balancing Authority (RC/BA) coordinate, review and initially approve pending ISO final approval, each proposed transmission equipment outage request in the applicable region prior to ISO logging and evaluating the proposed outage. Each transmission equipment outage is submitted primarily using the ISO Outage Scheduling software or by using the fax machine as a backup method (refer to M/LCC 7 - Processing Transmission Outage Applications). The ISO Outage Scheduling software uses internet based communications to schedule, monitor and track each transmission outage. Submittals for transmission outages should occur primarily through the ISO Outage Scheduling software. ISO evaluates the proposed outage given the forecasted conditions at the time of the evaluation and in accordance with the criteria contained in ISO New England Operating Procedure No. 19 - Transmission Operations (OP-19). ISO then re-evaluates the outage application as system conditions change over time. In conducting its analysis, ISO uses advanced applications including; PSS/E, Powerworld, Power Flow, Contingency Analysis and an Interface Transfer Limits Calculator (ILC) that model the bulk power system and apply contingencies against the system for analysis in approval/denial of proposed work. ISO communicates the transmission outage evaluation results to each applicable LCC and neighboring RC/BA and also posts transmission outages to ISO website to comply with the Federal Energy Regulatory Commission (FERC) requirements.


External Transfer limits are also created to establish the maximum amount of power that can be transferred over the New England ties reliably per the North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council Inc. (NPCC), and ISO operating criteria for anticipated system conditions.

Certain geographical subsets of the Bulk Electric System have, through transmission studies, been found to be constrained by transmission capabilities. The Operations Support Services (OSS) Group, on an as

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needed basis, performs transmission studies that identify new area protection zones. Typically, these studies result from operating issues observed or anticipated by ISO, an LCC, or an individual Transmission Owner. Limits are created for export areas to avoid excess commitment and dispatch of energy within the areas. This is accomplished by developing and respecting transfer limits and Reserve Zone requirements created so that import areas are able to sustain contingencies and have the ability to restore first contingency coverage within 30 minutes during real-time operations.

NERC Reliability Standard PRC-001 - System Protection Coordination requires each Transmission Operator and BA to monitor the status of each Special Protection System (SPS) in their area, and notify each affected Transmission Operators and BA of any change in status. The ISO Outage Scheduling software will track the status of an SPS if it is Out of Service. The status of an SPS is understood to be In-Service if there is no request in the ISO Outage Scheduling software.


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### 3. Responsibilities

**NOTE**

Any NERC Certified System Operator, certified at the RC level, has the authority to take action(s) required to comply with NERC Reliability Standards.

1. The Director, Operations Support Services is responsible for executing this procedure in conjunction with each LCC and Market Participant to ensure that the procedure is adhered to for the mitigation of risk.
2. The Supervisor, Short-Term Outages is responsible for responding to relevant Corrective Action Preventive Action (CAPA) issues and performing corrective actions to resolve discrepancies.
3. The Supervisor, Short-Term Outages is responsible for creating the monthly GRT load ratios and providing them to Monthly and Hourly Market groups, Operations personnel as well as each LCC (Local Control Center). The GRT Load ratios are determined by historical system load averages from similar months and conditions.
4. The Economic Outage Coordinator/Engineer is responsible for:
  - Performing congestion studies and requesting a complex study or advanced analysis be performed and contacting the OSS Group for review
  - Assisting the Outage Coordinator/Engineer when working with the Transmission Owner and/or LCC to review opportunities to reposition an outage request that has been identified as having significant congestion impact.
  - Assisting in performing the duties of the Outage Coordinator/Engineer designated D3 and performing Resource Outage Coordination as needed


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5. The Outage Coordinator/Engineer is responsible for:

- Assisting in performing the duties of the Outage Coordinator/Engineer designated D3 and performing Resource Outage Coordination
- Ensuring that transmission outage information received from an LCC and neighboring RC/BA is disseminated to the appropriate parties to ensure each transmission outage application is studied within required timeframe and the Powerflows are updated properly
- Reporting each SPS outage to the Operations Shift Supervisor via the ISO Outage Scheduling software to ensure correct SPS status is known.
- Ensuring that each submitted Short-Term Transmission Outage request is approved by the applicable LCC prior to ISO review in accordance with OP-3
- Ensuring each incorrectly submitted application is denied and the appropriate party is notified to resubmit or reapply
- Performing a daily initial review of each transmission outage request in the ISO Outage Scheduling software to determine if a complex study or advanced analysis should be performed and contacting the OSS Group for review
- Reporting each issue of non-conformance through the CAPA process


6. The Outage Coordinator/Engineer designated D3 is responsible for:

- Studying and approving/disapproving each Short-Term Transmission Outage request, which is out 3 days and beyond 3 days
- Creating and updating the Day\_MM\_DD\_XXXXXMW\_OSD3 Powerflow and beyond
- Reporting each issue of non-conformance through the CAPA process
- Reviewing each Transmission outage that affects Generators and verify an outage has been created in ISO Outage Scheduling software.
- Verifying Market Sensitive Flags are set appropriately in Transmission Outage Requests that are being reviewed


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7. The Outage Coordinator/Engineer designated D2 is responsible for:


- Verifying accuracy, updating and renaming the Powerflow received from the Outage Coordinator/Engineer designated D3 to the Day\_MM\_DD\_XXXXXMW\_OSD2 Powerflow and updating it
- Assisting in performing the duties of the Outage Coordinator/Engineer designated D3 and performing Resource Outage Coordination as needed
- Analyzing, approving/disapproving each Short-Term Transmission Outage request which is out 2 days and beyond
- Analyzing, Approving and disapproving each Short-Term Transmission Outage request which has a Request Type of “Forced” (not in the current day) until 16:30
- Calculating and posting the External Transfer limits on the Open Access Same-Time Information System (OASIS) and ISO web site by 1030
- Prior to 1100 meeting, review new and previous day GRT limits for accuracy
- Daily at approximately 1200 perform a turnover with the Outage Coordinator/Engineer designated D1 using the appropriate Powerflows so that:
  - The Outage Coordinator/Engineer designated D2 can assume the responsibilities of updating and communicating the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow
  - The Outage Coordinator/Engineer designated D1 can assume the responsibilities of updating the Day\_MM\_DD\_XXXXXMW\_OSD2 Powerflow and preparing the Powerflow cases for the next day Generation Required for Transmission (GRT) limits
- Reporting each issue of non-conformance through the CAPA process
- Assisting as needed when the Outage Coordinator/Engineer is unavailable or during heavy workloads
- Turning over an upcoming transmission outage and providing the updated D1 Powerflow to the Forecaster and on-shift Operations Shift Supervisor.
- Reviewing each Transmission outage that affects Generators and verify an outage has been created in the ISO Outage Scheduling software .
- Verifying Market Sensitive Flags are set appropriately in Transmission Outage Requests that are being reviewed

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8. The Outage Coordinator/Engineer designated D1 is responsible for:
- Verifying accuracy, updating and renaming the Powerflow received the previous day from the Outage Coordinator/Engineer designated D2 to the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow and updating it
  - The daily calculation of GRT limits using the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow and providing the Forecasters, Market Administrators and System Operators with the GRT limits on a day-ahead basis
  - Incorporating the External Transfer Limits received from the Outage Coordinator/Engineer designated D2 into the GRT spreadsheet
  - Attending the day ahead pre check out meeting with the Outage Coordinator/Specialist/Engineer and Market Administrators for validating each transmission outage in the ISO Outage Scheduling software and providing the Market Administrators with GRT limits
  - Notifying the Forecasters and Market Administrators of subsequent changes to the GRT limits
  - Daily at approximately 1200 perform a turnover with the Outage Coordinator/Engineer designated D2 using the appropriate Powerflows so that:
    - The Outage Coordinator/Engineer designated D2 can assume the responsibilities of updating and communicating the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow
    - The Outage Coordinator/Engineer designated D1 can assume the responsibilities of updating the Day\_MM\_DD\_XXXXXMW\_OSD2 Powerflow and preparing the Powerflow cases for the next day GRT limits
  - Reporting each issue of non-conformance through the CAPA process
  - Turning over the Powerflow cases used to develop the GRT limits to the on shift Security Operator
  - Reviewing each Transmission outage that affects Generators and verifying an outage has been created in ISO Outage Scheduling software .
  - Verifying Market Sensitive Flags are set appropriately in Transmission Outage Requests that are being reviewed


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9. The Security Operators are responsible for:
  - Assisting in processing a Short-Term Transmission Outage request as needed
  - Updating the ISO Outage Scheduling Software with SPS outage status as updated information is received
  - Processing each Short-Term Transmission Outage request that is designated Emergency and Forced from 16:30 day ahead through the Operating Day.
  - Communicating to the Outage Coordinators/Engineers any outage that either has been completed early or will overrun beyond its planned end date to ensure proper assumptions are used for developing the GRT limits
  - Reviewing each Transmission outage that affects Generators and verifying an outage has been created in ISO Outage Scheduling software.
  - Verifying Market Sensitive Flags are set appropriately in Transmission Outage Requests that are being reviewed
  
10. The OSS Group is responsible for performing a complex study or advanced analysis of an outage application when requested by the Outage Coordinator or other ISO personnel. This includes determining the adequacy of existing transmission limits and developing new limits based upon any complex study.

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#### 4. Controls

- The Director, Operations Support Services (or designee) shall designate ISO personnel (Outage Coordinator/Engineer, Outage Coordinator/Engineer designated D3, D2, D1 and the OSS Group) to perform functions pertaining to the outage coordination process
- The Director, Operations shall designate Control Room personnel (Operations Shift Supervisor, System Operator and Forecaster) to perform functions pertaining to the outage coordination process.
- Each Transmission application submitted for a given day for evaluation shall be evaluated using appropriate tools for analysis
- The Manager, Real Time Studies shall designate personnel in the OSS Group to conduct a special or complex study
- The Supervisor, Short-Term Outages shall convene monthly meetings as needed to respond to any relevant CAPA issue and other discrepancy and identify corrective actions
- Voice recorded phones are in place for the Control Room (Operations Shift Supervisor, System Operator, and Forecaster), Short Term Outage Coordination group personnel.
- External Transfer limit postings on the OASIS shall be available and subject to audit under the NPCC Compliance Program
- Outage Coordinators/Engineers D1 and D2 shall be available from 0630 to 1630, 7 days per week to perform duties as required in this procedure

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## 5. Instructions

### 5.1 Processing Short-Term Transmission Outage Requests

#### NOTE


The process for handling each Short-Term Transmission Outage Request is depicted in Attachment L – Short Term Outage Coordination Process.

Rules built into the ISO Outage Scheduling software require certain data fields to be populated to allow an application to be sent to ISO. Each Transmission outage application shall be submitted through the ISO Outage Scheduling software or via fax, as a backup method if the ISO Outage Scheduling software is inaccessible. Guidance on how to complete a Short-Term Transmission Outage request is contained in Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests, OP-3 and M/LCC 7.

If an outage request is overrun, select the “Overrun” button and change the Planned End Date Time.

The applicable LCC shall forward each Short-Term Transmission Outage request to ISO for approval unless the facility is listed as a Category B Facility and does not affect any Generator or Dispatchable Asset Related Demand (DARD) per OP-3 and M/LCC 7.

The applicable LCC shall notify the Outage Coordinator/Engineer first and if unavailable the Outage Coordinator/Engineer designated D3, D2, D1 or Control Room Security Operator as applicable when a transmission outage application is being faxed. This is to ensure that each faxed outage is entered into ISO Outage Scheduling software in the correct sequence to ensure the proper order of application numbers are assigned by the ISO Outage Scheduling software.

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### NOTE


ISO personnel shall access the ISO Outage Scheduling software by authentication through Windows Active Directory. ISO Control Room System Operators will need to log on using Username and Password known within Windows Active Directory.

The Outage Coordinator/Engineer will normally work 08:00 to 16:30, Monday through Friday and when unavailable the Outage Coordinator/Engineer designated D3, D2 or D1 shall assume the duties.

The processing of each Short-Term Transmission Outage request shall be performed per the following Steps to promote efficiency.


Whenever Master Local Control Center No 2 - Abnormal Conditions Alert (M/LCC 2) is declared (If due to capacity deficiencies, transmission abnormalities or if a Cold Weather Warning or Cold Weather Event has been declared) the outage denial/approval process shall include the maintenance, construction and test activities criteria contained in M/LCC 2.

Occasionally, a Transmission Owner or Generator Owner will request an equipment and/or protective relaying outage that will directly and/or indirectly impact the reliability of a Nuclear Power Generating Facility and/or neighboring RCA/BAA. Any outage request that directly or indirectly impacts Nuclear Plant Interface Requirements (NPIRs) shall be communicated to the Nuclear Power Plant affected in accordance with MLCC 7, MLCC 1 and ISO New England Operating Procedure No.14, Technical Requirements for Generators, Demand Resources and Asset Related Demands (OP-14). The communication to the Nuclear Power Plant should include information that which is necessary for safe and reliable operation. It is an expectation that any outage request that directly or indirectly impacts the reliability of a neighboring RCA/BAA is communicated in accordance with M/LCC 7 and OP-3. The communication to the neighboring RC/BA should include information that is necessary for safe and reliable operation.

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**5.1.1 Tasks for the Outage Coordinator /Engineer**

1. The Outage Coordinator/Engineer shall ensure the following and if unavailable, then the Outage Coordinator/Engineer designated D2, shall ensure that:
  - Any faxed outage application is received with the required information and within the time frames required in OP-3 prior to entering it into the ISO Outage Scheduling software. If the “Priority” of the application is not within required timeframes, the application will be denied and applicable parties shall be asked to reapply
  - Any faxed outage application is verified to have the following completed or resolved and if resolution cannot be performed, the applicable parties shall be asked to reapply:
    - Outage request provides sufficient information describing the transmission outage
    - Appropriate LCC and neighboring RC/BA approvals and notifications have been obtained
  - The faxed outage application is entered into the ISO Outage Scheduling software in the order they were received
  - The fax outage template is located in M/LCC 7, Attachment A-ISO Transmission Outage Request Form
  
2. The Outage Coordinator/Engineer shall daily:
  - A. Perform a review the topology of each “Submitted” outage in the ISO Outage Scheduling software scheduled to start 21 days in the future or less that includes but is not limited to the following:
    - Topology / devices are correctly entered in the ISO Outage Scheduling software data fields
    - Start and End times are still valid
    - Market Sensitive Flag is set to “Yes” or “No”
    - Supporting materials required by OP-3 are submitted
    - For an outage submitted with the Status of “Emergency” and “Forced”, ensure an explanation is included as to why it has been submitted with less than the required notice as described in OP-3
      - If no explanation is included, contact the applicable LCC and have the LCC provide an explanation
    - To determine if any changes are required resulting from ISO and LCC network model differences


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- B. Communicate each SPS outage or status change received from an LCC to the Operations Shift Supervisor to ensure correct SPS status is maintained in the Control Room and in the ISO Outage Scheduling Software.
- C. Report any noted discrepancy through the CAPA process.


**NOTE**

Monday through Friday, NYISO informs the Outage Coordinator/Engineer of anticipated system conditions that could cause the NY Central-East interface to become restrictive on New England single source contingencies above 1200 MW. Primarily this will allow us to inform affected Generators in advance that they "may" be asked to reduce to 1200 MW during the times that NYISO identifies. This advance notification will allow affected Generators to review any work they are anticipating that could hinder their ability to quickly back down to 1200 MW when directed to do so by the ISO Control Room System Operators. The Procedure To Protect For Single Source Contingency Guide may provide additional guidance. (This is found with the other Transmission Operating Guides on the ISO web).


3. When the Short Term Outage group is made aware of an accurate schedule for a new transmission or generating facility to go commercial, (based on communications between the LCC and ISO Short Term Outage group), the Outage Coordinator/Engineer shall notify the following:
- Manager, Power System Modeling Management
  - Operations Shift Supervisor
  - Forecasters
  - Market Administrators
  - OSS Group
  - Defined external entities in accordance with SOP-OUTSCH.0025.0010 – Update Outages Impacted by System Changes
4. The Outage Coordinator/Engineer shall inform any applicable Generator when NYISO anticipates system conditions that could cause the NY Central-East interface to become restrictive on New England single source contingencies above 1200 MW.

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5. When informing an applicable Generator, the Outage Coordinator/Engineer shall include a brief description of the any transmission outage(s) occurring in New York and that the outage(s) may reduce the maximum allowable ISO Source Contingency to as low as 1200 MW due to New York system reliability requirements.
6. The Outage Coordinator/Engineer shall log these notices in the Control Room Event Logserver (Logserver) per SOP-RTMKTS.0125.0040 - Update Control Room Logs.
7. The Outage Coordinator/Engineer shall attempt to resolve any noted discrepancy with the applicable LCC and / or neighboring RC/BA. When the discrepancy is resolved, the Senior Outage Coordinator shall annotate in the “Short Term ISO Study Summary” data field that the submitted application has been reviewed. This note shall include the date of review. If a discrepancy cannot be resolved the Outage Coordinator/Engineer shall “Deny” the request and ask that applicable parties reapply.
8. The Outage Coordinator/Engineer shall perform an ISO Outage Scheduling software update with each applicable LCC and / or neighboring RC/BA at 0930, Monday through Friday, including a discussion of any current and pending transmission outage. If any changes occurred to a “Submitted” Long Term Outage, the Short-Term Outage Group will contact the Long Term Outage Group and provide the information.
9. During the review, the Outage Coordinator/Engineer shall perform a non-conformance check and report any noted discrepancy through the CAPA process.
10. During the course of the shift, if a transmission outage requires a special study the Outage Coordinator/Engineer shall notify the OSS Group via email about the pending application in the ISO Outage Scheduling software.
  - a. The Outage Coordinator/Engineer shall place a note in the “Reasons/Priority” data field stating that a complex study has been requested.
  - b. The OSS Group shall perform SOP-OUTSCH.0050.0020 - Perform Complex Studies and return their results back to the Outage Coordinator/Engineer.
  - c. The Outage Coordinator/Engineer shall provide the complex studies to the Outage Coordinator/Engineer designated D1, D2 or D3.


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11. The Outage Coordinator/Engineer shall study each Short-Term Transmission Outage request as requested by the Supervisor of Short Term Outages using, but not limited to, Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.
12. The Outage Coordinator/Engineer shall assist in performing the duties of the Outage Coordinator/Engineer designated D3 and the Generator outage process as needed.
13. The Outage Coordinator/Engineer shall report any discrepancy issue through the CAPA process.

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**5.1.2 Tasks for the Economic Outage Coordinator/Engineer**

1. After satisfactory reliability studies are conducted, the Economic Outage Coordinator/Engineer assigned to work with an LCC, shall perform economic studies in accordance with SOP-OUTSCH.0030.0065 - Short Term Outage Economic Analysis:
  - Reposition the outage if it could be expected to violate reliability criteria
  - Attempt to reposition the outage if the outage causes more than \$200k in congestion costs and can be moved to another time.
    - a. If the outage causes a potential to incur more than \$200k in congestion cost and congestion would increase if moved to another time, the Economic Outage Coordinator/Engineer will notify the Market Administrator to discuss FTR issues and potential impact to the Congestion Revenue Fund.
    - b. The Monthly Market Operations Analyst working with the Economic Outage Coordinator/Engineer shall determine any negative impacts to the FTR Markets should the outage be allowed to proceed.
    - c. Economic Outage Coordinator/Engineer will coordinate with the LCCs and attempt to move the outage to another date if necessary
  - Reposition the outage to avoid net costs less than the \$200K threshold if agreed to by the involved Transmission Owner(s) or if the ISO determines that it is appropriate given its ultimate authority to approve or deny outages based upon market efficiency or reliability.
    - If an outage is denied by ISO, ISO will provide the specific reasons for the denial to the LCC
  - If the reposition process is expected to require more than 48 hours, the outage request shall be placed in the Negotiate state.
2. The Economic Outage Coordinator/Engineer and the LCC, working with the Transmission Owner, shall reschedule within the timeframes specified in OP-3.
3. Upon completion of the reposition process, the Outage Request shall be placed in the Approved or Denied state

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**5.1.3 Tasks for the Outage Coordinator/Engineer designated D3**


1. The Outage Coordinator/Engineer designated D3 shall create from an all lines in Basecase a Powerflow labeled as Day\_MM\_DD\_XXXXXMW\_OSD3 or greater. The Outage Coordinator/Engineer designated D3 shall keep the seven active OS D3 Powerflow cases and delete the other OS D3 cases to provide sufficient storage space in the OUTSCH Savecase Directory. Attachment G - Savecase Directory Listing provides an example of the OUTSCH Savecase Directory.
2. The Outage Coordinator/Engineer designated D3 shall prepare and update an outage summary sheet to expedite turn over and to assist in noting changes and assumptions made for when the Powerflow is turned over to the Outage Coordinator/Engineer designated D2.
3. The Outage Coordinator/Engineer designated D3 shall populate the OS\_D3 Powerflow or greater with all Short-Term Transmission Outage requests, that are contained in ISO Outage Scheduling software for the day being reviewed.
  - A. Each non-concurrent outage shall be evaluated to ensure that the most limiting outage is considered for inclusion in the Powerflow case.
  - B. Expected load forecasts and Generator outages shall be retrieved from the Outage Coordinator/Engineer and included in the OS\_D3 Powerflow.

**NOTE**

An outage request, which is to be included in the Day\_MM\_DD\_XXXXXMW\_OSD3 Powerflow or greater, include Interim Approved, Submitted, Study, Negotiate, Approved and Implemented Outages that occur on the day represented by the Powerflow.

Each Interim Approved Outage that is entering the Short-Term Outage process is to be reviewed and restudied as a Short-Term Transmission Outage request.

4. The Outage Coordinator/Engineer designated D3 shall study each Short-Term Transmission Outage request using, but not limited to, Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.


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5. If a transmission outage requires a special study the Outage Coordinator/Engineer designated D3 shall notify the OSS Group via email.
  - A. The OSS Group shall perform SOP-OUTSCH.0050.0020 - Perform Complex Studies and return their results back to the Outage Coordinator/Engineer.
  - B. The Outage Coordinator/Engineer shall use the information to approve or deny the transmission outage.
6. If a Generator/DARD output needs to be Must Run or restricted the Outage Coordinator/Engineer designated D3 shall notify the Outage Coordinator/Engineer to update the ISO Outage Scheduling software.

**NOTE**

Details of notifying the Outage Coordinator//Engineer or Outage Coordinator/Engineer designated D3, D2 or D1 about Must Run or constrained a Generator/DARD resulting from a transmission outage request is found in Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.

7. The Outage Coordinator/Engineer designated D3 shall change the Status of the “Submitted” application to “Study” for each outage being studied.
8. The Outage Coordinator/Engineer designated D3 shall “Approve” / “Deny” an outage that is 3 days or more in the future prior to 16:30.
9. The Outage Coordinator/Engineer designated D3 shall report discrepancy issue through the CAPA process.
10. If at any time the Outage Coordinator/Engineer designated D3 determines that an outage, which is 3 days in the future, cannot be completed by the end of their shift, the Outage Coordinator/Engineer designated D3 shall notify the Supervisor of Short Term Outages to perform contingency plans.
11. The Short Term Outage Coordinator/Engineer designated D3 shall notify the Economic Outage Coordinator/Engineer if is determined that a Generator may be **significantly** affected by reduced interface limits or local constraints.

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5.1.4 *Tasks for the Outage Coordinator/Engineer designated D2*

**NOTE**


The Outage Coordinator/Engineer designated D2 shall assist the Outage Coordinator/Engineer as needed.

1. At approximately 0630 the Outage Coordinator/Engineer designated D2 shall
  - A. As needed, review Attachment B - Outage Coordinator/Engineer, Forecaster and Security Operator Check Out
  - B. Contact the Security Operator to determine changes to any transmission outage that occurred over night
  - C. Ensure that the changes are made in the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow.
2. The Outage Coordinator/Engineer designated D2 shall;
  - A. Verify accuracy, update and rename the previously created Powerflow Day\_MM\_DD\_XXXXXMW\_OSD3 to the new designation of Day\_MM\_DD\_XXXXXMW\_OSD2.
  - B. Keep seven active OS D2 Powerflow cases and delete the other OS D2 cases to provide sufficient storage space in the OUTSCH Savecase Directory. (Attachment G - Savecase Directory Listing provides an example of the OUTSCH Savecase Directory.)

**NOTE**

An outage summary sheet is used to expedite turn-over and to assist in noting changes and assumptions made when the Powerflow is turned over to the Outage Coordinator/Engineer designated D1.

3. The Outage Coordinator/Engineer designated D2 shall prepare and update an outage summary sheet.
4. The Outage Coordinator/Engineer designated D2 shall revise the OS D2 Powerflow with updated information as follows:
  - Beginning at 0630 revise the Powerflow with expected outages
  - Throughout the shift, until turn over with Outage Coordinator/Engineer designated D1 occurs, update for:
    - Denied Outages
    - Cancelled outages or cancelled Profile Outages
    - Emergency and Forced Outages and any revised times
    - Revised Generator or DARD outages
    - Revised load forecasts


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- Perform a non-conformance check and report issues of discrepancy through the CAPA process. The Outage Coordinator/Engineer designated D2 shall “Deny / Cancel” Short-Term Transmission Outage requests that were previously “Approved” if it is determined that reliability cannot be maintained and update the OS D2 Powerflow by 1200.
5. The Outage Coordinator/Engineer designated D2 shall study each Short-Term Transmission Outage request which have a Request Type of “Forced” (not in the current day) using, but not limited to, Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.
  6. If a transmission outage requires a special study, notify the OSS Group about the pending application in the ISO Outage Scheduling software.
    - A. The OSS Group shall perform SOP-OUTSCH.0050.0020 - Perform Complex Studies and return their results back to the Outage Coordinator/Engineer.
    - B. The Outage Coordinator/Engineer shall use the information to approve or deny the transmission outage.
  7. If a Generator/DARD output needs to be Must Run or restricted the Outage Coordinator/Engineer designated D2 shall notify the Outage Coordinator/Engineer to update the ISO Outage Scheduling software.


**NOTE**

Details of notifying the Outage Coordinator/Engineer or Outage Coordinator/Engineer designated D3, D2 or D1 about Must Run or constrained Resources resulting from a transmission outage request is found in Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.


8. The Outage Coordinator/Engineer designated D2 shall “Approve / Deny” Request Types of “Forced” (not the current day) prior to the turnover at 1200 with the Outage Coordinator/Engineer designated D1.
9. If the Outage Coordinator/Engineer designated D2 determines that an outage with Request Type of “Forced” (not the current day), cannot be completed by the end of their shift, the Outage Coordinator/Engineer designated D2 shall notify the Supervisor of Short-Term Outages to perform contingency plans.

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10. If the Outage Coordinator/Engineer designated D2 determines by the end of their shift, they cannot “Approve” or “Deny” outage requests 24 hours prior to their start date, the Outage Coordinator/Engineer designated D2 shall notify the Supervisor of Short-Term Outages to perform contingency plans.
11. The Outage Coordinator/Engineer designated D2 shall perform Attachment F - Determining and Posting External Transfer Limits.
12. By 1030 the Outage Coordinator/Engineer designated D2 shall post to OASIS and the ISO website the forecasted External Transfer Limits in accordance with Attachment F - Determining and Posting External Transfer Limits.
13. The Outage Coordinator/Engineer designated D2 shall provide the External Transfer Limits for the GRT spreadsheet to the Outage Coordinator/Engineer designated as D1.
14. The Outage Coordinator/Engineer designated D2 (or designee) shall attend the 1100 meeting and review new and previous day GRT limits for accuracy.
15. Daily at approximately 1200 the Outage Coordinator/Engineer designated D2 shall perform a turnover with the Outage Coordinator/Engineer designated D1 using the appropriate Powerflows so that:
  - The Outage Coordinator/Engineer designated D2 can assume the responsibilities of updating and communicating the Day\_MM\_DD\_XXXXXMW\_OSD1 Powerflow
  - The Outage Coordinator/Engineer designated D1 can assume the responsibilities of updating the Day\_MM\_DD\_XXXXXMW\_OSD2 Powerflow and preparing the Powerflow cases for the next day GRT limits
16. Through the remainder of the shift the Outage Coordinator/Engineer designated D2 shall:
  - A. Update the Powerflow case designated Day\_MM\_DD\_XXXXXMW\_OSD1 with approved Short-Term Transmission Outage requests that are 1 day in the future, Category B Facilities found in Attachment B of M/LCC 7 which affect approved Short-Term Transmission Outage requests

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- B. Disapprove outages as necessary
  - C. Update the Powerflow with expected load forecasts and generation.
17. The Outage Coordinator/Engineer designated D2 shall using the Powerflow case designated Day\_MM\_DD\_XXXXMW\_OSD1 perform a Contingency analysis in preparation for hand off to the Security Operator.
18. Daily by 1400, the Outage Coordinator/Engineer designated D2 shall meet with the Forecasters and provide a printed summary from the ISO Outage Scheduling software to:
- A. Communicate any constrained or Must Run Generator/DARD, specific outages and associated studies where problems were found
  - B. Review mutually exclusive outages.
19. During the 1400 meeting, the Outage Coordinator/Engineer designated D2 shall provide the Outage Coordinator/Engineer with any changes to the Contingency analysis for the upcoming day.
- A. This will be used to assist in determining Reliability Must Run (RMR) Generators as developed in SOP-RTMKTS.0050.0005 Determine Reliability Commitment for Real-Time.
20. Daily by 1430, the Outage Coordinator/Engineer designated D2 shall perform Attachment B – Outage Coordinator/Engineer, Forecaster and Security Operator Check Out, to:
- A. Communicate the Contingency analysis for the upcoming day
  - B. Certify the accuracy and understanding of approved transmission outages.
21. The Outage Coordinator/Engineer designated D2 shall report any discrepancy issue through the CAPA process.

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**5.1.5 Tasks for the Outage Coordinator/Engineer designated D1**

1. By 0700 the Outage Coordinator/Engineer designated D1 shall verify accuracy, update and rename the previously created Powerflow Day\_MM\_DD\_XXXXXMW\_OSD2 to the new designation of Day\_MM\_DD\_XXXXXMW\_OSD1.

**NOTE**


Attachment G - Savecase Directory Listing provides an example of the OUTSCH Savecase Directory.

- A. The Outage Coordinator/Engineer designated D1 shall keep seven active OS D1 Powerflow cases and delete the other OS D1 cases to provide sufficient storage space in the OUTSCH Savecase Directory.

**NOTE**


An outage summary sheet is used to expedite turn-over and to assist in noting changes and assumptions made when the Powerflow is turned over to the Outage Coordinator/Engineer designated D2.

- B. The Outage Coordinator/Engineer designated D1 shall prepare and update an outage summary sheet.
2. If a transmission outage requires a special study the Outage Coordinator/Engineer designated D1 shall notify the OSS Group about the pending application in the ISO Outage Scheduling software.
  - A. The OSS Group shall perform SOP-OUTSCH.0050.0020 - Perform Complex Studies and return their results back to the Outage Coordinator/Engineer.
  - B. The Outage Coordinator/Engineer shall use the information to approve or deny the transmission outage.
3. By 1000, the Outage Coordinator/Engineer designated D1 shall retrieve from the Forecaster the revised forecasted loads for the next day.
4. Using the Powerflow case designated Day\_MM\_DD\_XXXXXMW\_OSD1 the Outage Coordinator/Engineer designated D1 shall update and revise the necessary Powerflow case to develop the next day 2<sup>nd</sup> contingency limits and any additional cases for the calculation of interface limits.
5. The Outage Coordinator/Engineer designated D1 shall prepare the base cases for 2<sup>nd</sup> contingency analysis and an additional base cases by verifying accuracy, updating and renaming the previously created

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Powerflow Day\_MM\_DD\_XXXXXMW\_OSD1 to the new designations of AA\_Day\_MM\_DD\_ D1/Persons Name.

6. The Outage Coordinator/Engineer designated D1 shall keep the last seven days of Powerflow cases used to develop 2<sup>nd</sup> contingency limits and delete the other cases to provide sufficient storage space in the OUTSCH Savecase Directory. Attachment G - Savecase Directory Listing provides an example of the OUTSCH Savecase Directory.
7. The Outage Coordinator/Engineer designated D1 shall:
  - A. Update the Powerflow case designated Day\_MM\_DD\_XXXXXMW\_OSD1 with approved Short-Term Transmission Outage requests that are 1 day in the future,
  - B. Deny outages as necessary
  - C. Update the Powerflow with expected load forecasts and generation.
8. The Outage Coordinator/Engineer designated D1 shall perform Attachment E - Determining GRT Limits to create the GRT Limits for the next day.
9. The Outage Coordinator/Engineer designated D1 shall receive the External Transfer Limits from the Outage Coordinator/Engineer designated D2 and input the limits into the GRT.
10. The Outage Coordinator/Engineer designated D1 shall review External Transfer Limits created and ensure they are compared and correspond with the limits of the GRT.
11. Prior to the day ahead pre-check out meeting with Market Administrators, the Outage Coordinator/Engineer designated D1 shall review the outages for the next day and include in the review, expansion of the outage request equipment group and checking of the equipment being opened / closed to simulate the outage.
12. Prior to the day ahead pre-checkout meeting with Market Administrators, the Short-Term Outage Coordinator designated D1 shall:
  - A. Post preliminary GRT Limits to the RTSMB Server
  - B. Provide a copy to the Outage Coordinator/Engineer designated D2 for review.


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13. Following the review of transmission outages for the next day, the Outage Coordinator/Engineer designated D1 shall report any errors found that pertain to the transmission application or the ISO Outage Scheduling software through the CAPA process.
14. During the 1100 day ahead pre check out meeting with Market Administrators the Outage Coordinator/Engineer designated D1 shall perform a formal review with the Market Administrator using Attachment A - Day Ahead Pre Check Out Template to certify the accuracy and understanding of approved transmission outages.
15. If necessary, the Outage Coordinator/Engineer designated, as D1 shall post revised GRT limits to the RTSMB Server in accordance with Attachment H - GRT Limit Time Table for the Day Ahead Market.

**NOTE**

Attachment I - GRT Limit Variations Over Time, provides information on the basis for which GRT limits are derived and why they may change from when initially determined.

16. Daily at approximately 1200 the Outage Coordinator/Engineer designated D1 shall perform a turnover with the Outage Coordinator/Engineer designated D2 using the appropriate Powerflows so that:
  - The Outage Coordinator/Engineer designated D2 can assume the responsibilities of updating and communicating the Day\_MM\_DD\_XXXXMW\_OSD1 Powerflow
  - The Outage Coordinator/Engineer designated D1 can assume the responsibilities of updating the Day\_MM\_DD\_XXXXMW\_OSD2 Powerflow and preparing the Powerflow cases for the next day GRT limits
17. The Outage Coordinator/Engineer designated, as D1 shall update the GRT on the Real Time Samba (RTSMB) Server until the 1400 meeting with the Control Room Shift Supervisor

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18. The Outage Coordinator/Engineer designated D1 shall revise the OS D2 Powerflow with updated information throughout the remainder of the shift as follows:

- Denied Outages
- Cancelled outages or cancelled Profile Outages
- Emergency and Forced Outages
- Outages that are Overrun
- Revised Generator or DARD outages
- Revised transmission outage times
- Revised load forecasts

**NOTE**


The expected GRT limits will be used to assist in determining a Reliability Must Run (RMR) Generator as developed in SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.

19. At 1400, the Outage Coordinator/Engineer designated as D1 shall provide the Operations Shift Supervisor with the expected GRT limits and appropriate Powerflow base cases used for determining 2<sup>nd</sup> contingency limits for the upcoming day.

20. The Outage Coordinator/Engineer designated as D1 shall email the GRT spreadsheet (containing the latest revisions) to interested parties using the Outlook group email listing “GRT” and place on the RTSMB server.


21. At 1400, the Outage Coordinator/Engineer designated D1 shall complete Attachment B, daily with the Outage Coordinator/Engineer or Outage Coordinator/Engineer and Operations Shift Supervisor to:

- A. Communicate any constrained or Must Run Resources, specific outages and associated studies where problems were found
- B. Review mutually exclusive outages.

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**5.1.6 Tasks for the Security Operators**

1. At 1430, the Security Operators shall complete, Attachment B - Outage Coordinator/Engineer, Forecaster and Security Operator Check Out daily for the turnover with the Outage Coordinator/Engineer designated D2 to certify the accuracy and understanding of the approved transmission outages.
2. Using Attachment B - Outage Coordinator/Engineer, Forecaster and Security Operator Check Out, the Security Operator shall perform a turn-over to certify the accuracy and understanding of approved transmission outages with the oncoming shift Security Operator.
3. The Security Operator shall ensure that information received from any LCC and neighboring RC/BA after hours that pertain to any transmission outage is provided to the Outage Coordinator/Engineer.
4. The Security Operator shall copy the D1 Powerflow case from the OUTSCHED directory into the CTRLROOM directory for use in the nightly studies.
5. The Security Operator on the night shift shall verify:
  - A. The accuracy, update and rename the D1 Powerflow base case to the Day\_MM\_DD\_XXXXXMW\_\_PC Powerflow base case
  - B. The topology correctly corresponds to the outages that are in the ISO Outage Scheduling software and are listed in the Powerflow Network Data Description field by 0100.
6. As needed, the Security Operator shall study each Short-Term Transmission Outage request using, but not limited to, Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.
7. During the study of Forced Outages the Security Operator shall perform a non-conformance check and report any noted discrepancies through the CAPA process.
8. By 0300, the Security Operator, using Attachment B - Outage Coordinator/Engineer, Forecaster and Security Operator Check Out shall contact each applicable LCC individually to discuss the day's upcoming transmission work and SPS statuses and verify all applicable parties are up to date on equipment to be worked on and the switching schedules.
9. Security Operators shall complete Attachment B prior to the end of the night shift and place the completed report in the Attachment "B" binder located at the Security Desk.

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10. The Security Operator shall ensure the Attachment B forms are retained for the previous and current months and are available for Outage Coordinator/Engineer designated D2 to review.
11. Security Operator shall study and Approve / Deny Short-Term Transmission Outage request whenever:
  - A. An outage request is designated Emergency or Forced and has a “Planned Start” within the current operating day
  - B. The Outage Coordinators/Engineers or Outage Coordinator/Engineers are not available.
12. If a transmission outage requires a special study the Security Operator shall notify the OSS Group via email about the pending application in the ISO Outage Scheduling software.
  - A. The OSS Group shall perform SOP-OUTSCH.0050.0020 - Perform Complex Studies and return the results back to the on shift Security Operator.
13. After 16:30, Security Operators shall update the ISO Outage Scheduling software and the PC Powerflow case with any Short-Term Transmission Outage hat is designated Forced or Emergency along with expected load forecasts and Generator and DARD outages.
14. If a Generator/DARD output needs to be Must Run or is restricted the Security Operator shall notify the Forecaster to update the ISO Outage Scheduling software.

**NOTE**

Details of notifying the Outage Coordinator/Engineer about Must Run or constrained Generator/DARD resulting from a transmission outage request is found in Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests.

ISO shall be informed immediately by the applicable LCC whenever equipment is taken out of service and/or restored to service.

15. Prior to the time that would require delay of the start time for the outage and still allow for advance notice, the Security Operator shall restudy upcoming transmission outages to provide a final analysis using real time conditions.

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16. The Security Operator shall verify proper breaker operations in RTNET when transmission equipment is taken out and returned to service.
17. The Security Operator shall manually update the ISO Outage Scheduling software with the actual Start and End times of the outage within one hour of when the parallel is made or broken.
18. When conditions change that affect system reliability, the Security Operator shall consider returning scheduled outages to service if needed to maintain reliability.
19. When notified of a delay in the start or completion of a transmission outage, the Security Operator shall:
  - A. Evaluate the impact on any must-run Generator or system security and make necessary changes and notifications.
  - B. If changes to the transmission outage extend beyond the current day, communicate the impact to the Outage Coordinator/Engineer D2.
20. If an overrun occurs, the System Operators shall:
  - A. Communicate with each applicable LCC, neighboring RC/BA, and Outage Coordinator/Engineer
  - B. Manually update the ISO Outage Scheduling software by:
    - (1) Click on the “Overrun” button
    - (2) Note the estimated time of return in the Short Term ISO Study Summary
    - (3) Change the Planned End Date Time.


**NOTE**

When transmission work is complete, the applicable LCC notifies the Security Operator for authorization to return to service in accordance with Master Local Control Center No. 7 - Processing Transmission Outage Applications (M/LCC #7).

The ISO Outage Scheduling software shall alert 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 = 3/4/2011 @ 1600  
 Security Desk gets call from LCC on 3/4/2011 @ 1500 that the outage will extend until 2300.

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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 = 3/4/2011 @1200

Security Desk gets call from LCC on 3/4/2011 @1100 that the outage will extend until 3/5/2011 @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.

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## 6. Performance Measures

This procedure is deemed to be properly followed as evidenced by the following:

- Corporate Goal for NPCC Reliability Compliance and Enforcement Program (RCEP) non-compliance letters received by ISO in regards to Area Transmission Review
- Corporate Goal for NPCC RCEP non-compliance letters received by ISO in regards to Operating Reserve is met
- Goal for Corporate performance in the Control Performance Standard (CPS1, CPS2) and Disturbance Control Standards (DCS) compliance met
- The following are being tracked as leading indicators and responded to:
  - Topology / device errors which are incorrectly entered in the ISO Outage Scheduling software
  - Emergency and Forced Outage applications without explanation for being submitted less than 120 hours
  - Emergency and Forced Outage applications entered as Planned Outages
  - The number of apps not studied and approved 48 hours prior to 0001 of the day of the outage and the reason why
  - The number of apps not studied and approved 24 hours prior to 0001 of the day of the outage and the reason why
  - If changes were required resulting from ISO and LCC network model differences
  - If deadlines were missed as depicted in Attachment C – Outage Coordination Process Overview, and reasons why

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## 7. References

NERC Reliability Standard MOD-029 - Rated System Path Methodology

NERC Reliability Standard PRC-001 - System Protection Coordination

ISO New England - ISO New England Inc. Transmission, Markets and Services Tariff Section III, ISO New England Market Rule 1 - Standard Market Design (Market Rule 1)

ISO New England Information Policy

ISO New England Operating Procedure No. 3 - Transmission Outage Scheduling (OP-3)

ISO New England Operating Procedure No. 4 - Action During a Capacity Deficiency (OP-4)

ISO New England Operating Procedure No. 5 - Generator and Dispatchable Asset Related Demand Maintenance and Outage Scheduling (OP-5)

ISO New England Operating Procedure No. 7 - Action in an Emergency (OP-7)

ISO New England Operating Procedure No. 14 - Technical Requirements for Generators, Demand Resources and Asset Related Demands (OP-14)

ISO New England Operating Procedure No. 19 - Transmission Operations (OP-19)


Master/Local Control Center No. 1 - Nuclear Plant Transmission Operations (M/LCC 1)

Master/Local Control Center No. 2 - Abnormal Conditions Alert (M/LCC 2)

Master/Local Control Center No. 7 - Processing Transmission Outage Applications (M/LCC 7)

SOP-OUTSCH.0040.0020 - Create Seven-Day Capacity Margin Forecast

TOG - Procedure to Protect for Single Source Contingency Guide Area TOGs

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SOP-OUTSCH.0025.0010 - Update Outages Impacted by System Changes

SOP-OUTSCH.0030.0010 - Evaluate Generation and Dispatchable Asset Related Demand Outage Requests

SOP-OUTSCH.0030.0065 - Short Term Outage Economic Analysis

SOP- OUTSCH.0040.0010 - Create Load Forecast

SOP-OUTSCH.0050.0010 - Determine Study Requirements

SOP-OUTSCH.0050.0020 - Perform Complex Studies

SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time

SOP-RTMKTS.0050.0010 - Perform Reserve Adequacy Assessment

SOP-RTMKTS.0060.0020 - Update EMS Network

SOP-RTMKTS.0110.0010 - Maintain Real-Time Operational Data


SOP-RTMKTS.0125.0040 - Update Control Room Logs

Powerflow Users Guide


Contingency Analysis Users Guide

## 8. Revision History


Rev. No.	Date	Reason	Contact
0	02/01/05	Initial SOP for Outage Coordination resulting from Operations Excellence initiative	Pete Harris
1	03/29/05	Revise SOP to incorporate enhancements and lessons learned during the initial implementation	Pete Harris
2	08/29/05	Revise SOP to incorporate further enhancements and lessons learned	Pete Harris
3	10/25/05	Incorporated steps to implement a temporary contingency definition when required and clarified use of Western Mass load swap and use of Western Mass ties	Pete Harris
4	11/28/05	Revised to reflect changes in Cold Weather operations (MR1 Appendix H)	Pete Harris
5	2/6/06	Revised Long-Term Transmission Outage Plan process to OP 3 changes	Pete Harris
6	2/27/06	Added information on how GRT limits are created	Pete Harris

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Rev. No.	Date	Reason	Contact
7	03/27/06	Deleted references to the OS Auto Save feature since it has been disabled	Pete Harris
8	05/05/06	Updated for Control Room Forecaster Split, removed Cold Weather Conditions actions (MR1 App H retired)	Peter Harris
9	08/10/06	Revised various process timings, communications and personnel involvements	Peter Harris
10	09/29/06	Revised for ASM Phase 2 and added resolution for CAPA 06-0326	Peter Harris
11	11/30/06	Added inclusion of M/LCC 2 Criteria (Cold Weather Conditions /MR1 App H, Etc.) for outage approval process	Peter Harris
12	04/02/07	Revised to reflect latest practices and process changes	Peter Harris
13	07/09/07	Revised to reflect actions to track SPS device statuses	Peter Harris
14	10/30/07	Clarified communications for transmission outage process	Peter Harris
15	12/21/07	Revised for NSTAR LCC status, updated SPS document listing and updated activities to match current process	Peter Harris
16	02/11/08	Revised Attachment B form (page 46) used to track handoff of GRT Spreadsheet to include posting time of final GRT	Peter Harris
17	09/18/08	Global revisions to use current terminology and defined terms/acronyms. Revised the following to ensure all outages are included in the case set up for the Security Operator and the most limiting of non-concurrent outages are also included: step 5.3.2.3 is modified; deleted step 5.3.3.19 & added new step 5.3.5.3; Attachment F (Determining GRT limits) step 7.D; Attachment G (Guidelines on performing powerflows) step K. Attachment G step X also required correction due to improper wording and to update the tools used.	Peter Harris
18	12/15/08	Changed "Review Due Date" to "Valid Through: mm/dd/yyyy (24 months from effective date) Global changes to incorporate new Outage Coordination schedules, OP#3 timeline updates, removal of Attachment G+H, and automation of Interface limit calculations.	John Simonelli
19	03/30/09	Revised to reflect management changes and review process changes. Revised process on overruns and added Me-NH and Lower South East Mass GRT guidance	John Simonelli

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<b>Rev. No.</b>	<b>Date</b>	<b>Reason</b>	<b>Contact</b>
20	06/01/10	Entire document biennial review by procedure owner; Update of header copyright date; Globally revised roles within Short Term Outage Coordination group; Globally corrected editorial discrepancies; Modified Section 1 <sup>st</sup> paragraph, last paragraph; Section 3: replaced step 3.3, modified step 3.4 & 3.5; Section 5 NOTE added guidance to include NUD-001; Modified Steps 5.1.4.1, 5.1.5.12, 5.1.6.11; Section 7 added OP-14, MLCC 1; Section 9 modified Attachments B, C,; retired Attachments J & K	John Simonelli
21	07/01/11	Updated the Header copyright date and replaced the Footer page numbers with Page X of Y format; Globally: replaced “Outage Specialist/Engineer” with “Outage Coordinator/Engineer”; replaced “Economic Analyst/Engineer” with “Economic Outage Coordinator/Engineer”; replaced “SAM” with “ISO Outage Scheduling software” Minor editing in Section 5, updated references in Section 7 Attachment A nomenclature updated to current usage; Attachment B sign-off increased to include MA Peer Review; Attachment D corrected nomenclature Attachment E major re-write to reflect current practices and management expectations. Attachment F deleted text in Step 2 that no longer applies	John Simonelli

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## 9. Attachments

Attachment A - Day Ahead Pre Check Out Template (Confidential)

Attachment B - Outage Coordinator/Engineer, Forecaster and Security Operator Check Out (Confidential)

Attachment C - Outage Coordination Process Overview

Attachment D - Best Practices for Studying and Completing Short-Term Transmission Outage Requests (Confidential)

Attachment E - Determining GRT Limits (Confidential)

Attachment F - Determining and Posting External Transfer Limits (Confidential)

Attachment G - Savecase Directory Listing (Example).


Attachment H - GRT Limit Time Table for the Day Ahead Market

Attachment I - GRT Limit Variations Over Time.

Attachment J - Retired 06/01/10


Attachment K - Retired 06/01/10

Attachment L - Short-Term Outage Coordination Process

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**Attachment A - Day Ahead Pre-Check Out Template (Confidential)**

**The information in this Attachment is Confidential.**

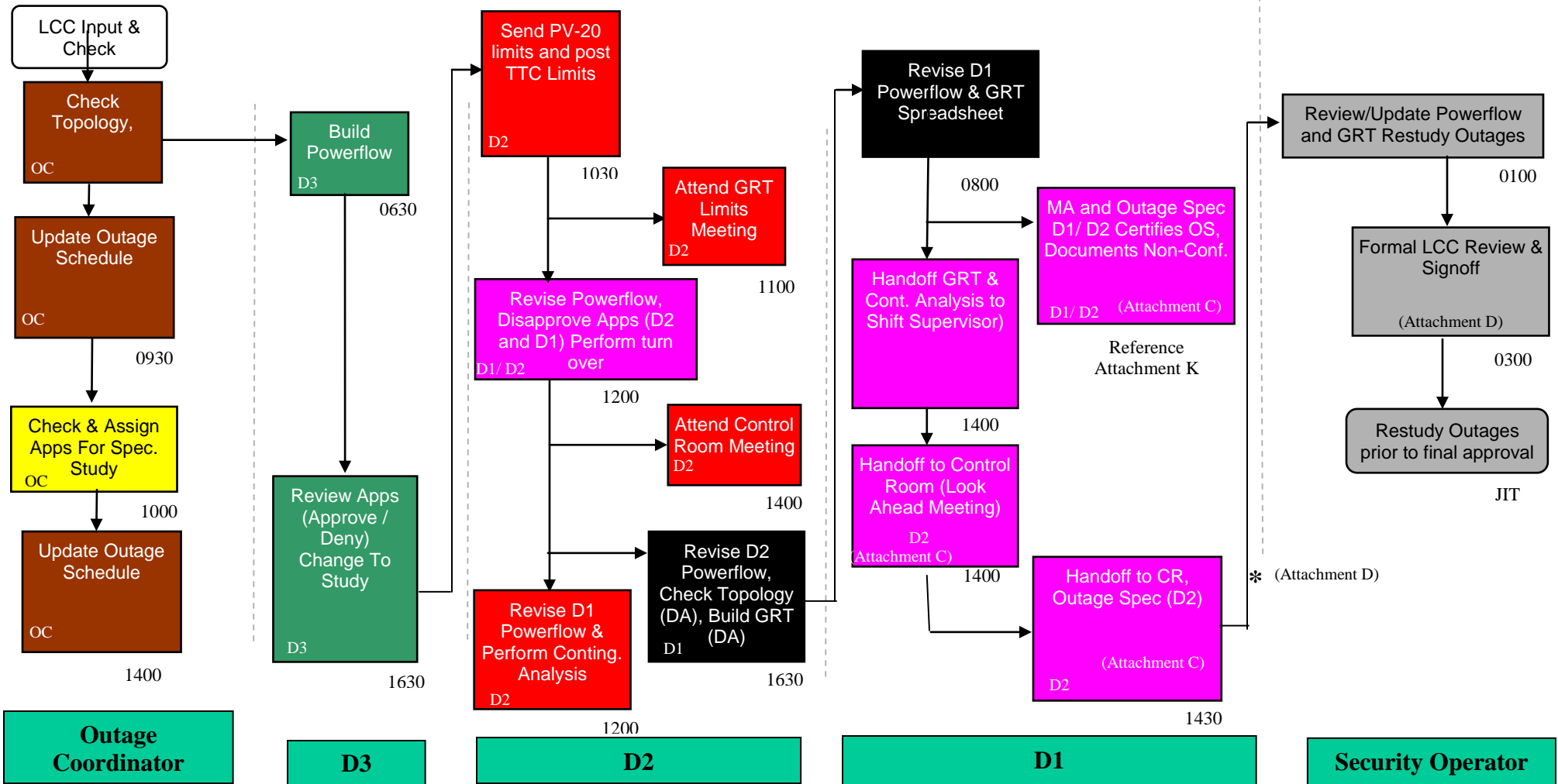
	© <b>ISO New England Inc. 2011</b>	<b>Procedure: Perform Short Term Outage Coordination</b>
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**Attachment B - Outage Coordinator/Engineer, Forecaster and Shift Supervisor  
Check Out (Confidential)**

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	Procedure Number: OUTSCH.0030.0020	Revision Number: 21
	Procedure Owner: John Simonelli	Effective Date: draft
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### Attachment C - Outage Coordination Process Overview



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	<b>Procedure Owner: John Simonelli</b>	<b>Effective Date: draft</b>
	<b>Approved By: Director, Operations Support Services</b>	<b>Valid Through: June 1, 2012</b>


**Attachment D - Best Practices for Studying and Completing Short-Term  
Transmission Outage Requests (Confidential)**

**The information in this Attachment is Confidential.**

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**Attachment E - Determining GRT Limits (Confidential)**

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**Attachment F - Determining and Posting External Transfer Limits (Confidential)**

**The information in this Attachment is Confidential.**

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	<b>Procedure Number: OUTSCH.0030.0020</b>	<b>Revision Number: 21</b>
	<b>Procedure Owner: John Simonelli</b>	<b>Effective Date: July 1, 2011</b>
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### Attachment G - Savecase Directory Listing (Example)


AA\_FRI\_03\_16\_19500MW\_XXX  
AA\_MON\_03\_19\_19000MW\_XXX  
AA\_SAT\_03\_17\_19500MW\_XXX  
AA\_SUN\_03\_18\_19000MW\_XXX  
AA\_THU\_03\_15\_19175MW\_XXX  
AA\_TUE\_03\_13\_19000MW\_XXX  
AA\_WED\_03\_14\_19300MW\_XXX  
FRI\_03\_16\_12700MW\_OSD3  
FRI\_03\_16\_13700MW\_OSD1  
FRI\_03\_16\_13700MW\_OSD2  
MON\_03\_19\_12000MW\_OSD3  
MON\_03\_19\_12200MW\_OSD2  
MON\_03\_19\_13200MW\_OSD1  
SAT\_03\_17\_14600MW\_OSD3  
SAT\_03\_17\_14800MW\_OSD1  
SAT\_03\_17\_14800MW\_OSD2  
SUN\_03\_18\_13000MW\_OSD2  
SUN\_03\_18\_13500MW\_OSD1  
SUN\_03\_18\_13500MW\_OSD3  
THU\_03\_15\_16700MW\_OSD1  
THU\_03\_15\_16700MW\_OSD2  
THU\_03\_15\_16780MW\_OSD3  
TUE\_03\_13\_12500MW\_OSD1  
TUE\_03\_13\_12500MW\_OSD3  
TUE\_03\_13\_12500MW\_OSD3  
WED\_03\_14\_14000MW\_OSD1  
WED\_03\_14\_14000MW\_OSD2  
WED\_03\_14\_14000MW\_OSD3

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## Attachment H - GRT Limit Time Table for the Day Ahead Market

### Time Table during Normal Operations

- **Prior to 11:00** - Post a preliminary GRT sheet to RTSMB Server
- **11:00** - Daily Meeting between Market Administration, Forecast, Outage Coordinator/Engineer and Outage Coordinator/Engineer designated D3, D2 or D1. Review and discuss expected outages and limits. If one of the three departments involved cannot meet at this time, they must provide notification including a verbal explanation and an estimate of when the meeting will commence.
- **12:00** - **HARD DEADLINE** - End consideration of transmission topology changes for the purpose of the Day Ahead Market, upload outages from the ISO Outage Scheduling software. If no further changes are required due to changes in outage assumptions or discrepancies found, the GRT may be considered final.
- **12:00** – **Final GRT is expected at this time.** If GRT is not yet final, reason must be documented on the GRT Spreadsheet & Meeting Tracking Form. The critical timeframe that will impact this delivery are influencing changes in transmission assumptions between 10:00 and 12:00 or Software/Hardware issues between 06:00 and 12:00. Supervision will review and track these occurrences, as appropriate CAPA Issues may be submitted.
- **13:00** – **If GRT is not yet final, late matrix will be triggered and reported through the COO Monthly Performance Report.** Reason must be documented on the GRT Spreadsheet & Meeting Tracking Form. Supervision will review and track these occurrences, as appropriate CAPA Issues may be submitted. **Final GRT must be delivered ASAP.**
- **16:00** - Deadline for posting DAM Results.


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### Attachment I - GRT Limit Variations Over Time


Due 1100 Day Ahead	Due 1600 Day Ahead	Due 0000 Operating Day	Current Operation Day
<p>GRT Limits based on:</p> <ul style="list-style-type: none"> <li>• Simulation based on: <ul style="list-style-type: none"> <li>○ Planned transmission topology as of 1100 Day Ahead</li> <li>○ Planned Generation Outages as of 1100 Day Ahead</li> <li>○ Assumed online generation as of 1100 Day Ahead</li> <li>○ Forecasted load as of 1100 Day Ahead</li> <li>○ Forecasted area load percentages</li> </ul> </li> </ul>	<p>Day Ahead Schedule and LMPs are based on:</p> <ul style="list-style-type: none"> <li>• Day Ahead GRT Limits</li> <li>• Day Ahead Bid in Load</li> <li>• Virtual Increment Offers</li> <li>• Virtual Decrement Load</li> <li>• Internal Transactions</li> <li>• External Transactions</li> </ul>	<p>Forecast Current Operating Plan based on:</p> <ul style="list-style-type: none"> <li>• Day Ahead Schedule and LMPs</li> <li>• Gen Re-Offers</li> <li>• Forecasted Load</li> <li>• Resource Redeleclarations</li> <li>• </li> </ul>	<p>Real Time Operations based on:</p> <ul style="list-style-type: none"> <li>• RT load</li> <li>• RT Net</li> <li>• RT Topology</li> <li>• RT Gen Availability and Commitment</li> <li>• Double C RT Limits</li> <li>• RT area load percentages</li> </ul>
GRT Limits are imported into DA Case	Day Ahead Schedule and LMPs are the start of the Current Operating Plan	Current Operating Plan is basis of the RT Resource Commitment	RT limits may have little correlation to GRT limits

Major Contributors to Difference in Limits from GRT to Real Time:


1. 13 hours of time lag between GRT limits handoff and Current Operating Day.
2. Day Ahead Increment Offers and Decrement Loads, which do not exist in GRT limits or RT limits.
3. Day Ahead using Bid-In load vs. the use of Forecasted load by GRT, and RT load by Control Room.
4. GRT limit analysis is a peak-hour, day ahead analysis. RT limits are based on RT loads and RT Net State Estimator.

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**Attachment J - Retired 06/01/10**

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	<i>Procedure Number: OUTSCH.0030.0020</i>	<i>Revision Number: 21</i>
	<i>Procedure Owner: John Simonelli</i>	<i>Effective Date: July 1, 2011</i>
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**Attachment K - Retired 06/01/10**

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	Process Name: Capture and Evaluate Outage Requests	Revision Number: 21
	Procedure Number: OUTSCH.0030.0020	Effective Date: July 1, 2011
	Procedure Owner: John Simonelli	Valid Through: June 1, 2012
	Approved By: Director, Operations Support Services	

**Attachment L - Short Term Outage Coordination Process**

Operating Procedure #3 – Short Term Outage Coordination Process

