SOP-OUTSCH.0030.0040 -
Perform Long Term Resource Outage Coordination

Contents

	© ISO New England Inc. 2024	Procedure: Perform Long Term Resource Outage Coordination
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	Revision Number: 7
	Procedure Owner: Andrew Kopacka	Effective Date: May 22, 2024
	Approved By: Director, Operations Support Services	Review Due Date: May 22, 2026

1. Objective

The objectives of this procedure are:

1. To document the responsibilities of ISO New England (ISO) staff assigned to the Long Term Outage Coordination (LTOC) group who evaluate each long-term Resource outage request.

2. To explain how to perform Operable Capacity (OPCAP) Analysis using Long Term Operable Capacity Margin (LTOCM) calculation.

3. To explain how to produce, update and manually publish the Annual Maintenance Schedule (AMS) reflecting approved Resource outages, if needed.

4. To describe how to produce the Chief Operations Officer (COO) report.

This procedure does **not** in any way change the intent of ISO New England Operating Procedure No. 5 - Resource Maintenance and Outage Scheduling (OP-5) but rather is intended to clarify the responsibilities delegated to the ISO staff by OP-5.

Compliance with this procedure is necessary for reliable operation of the Bulk Electric System (BES). The actions described in this procedure can affect market operations and settlements.

2. Background

A Resource outage request or Planned Outage (PO) is submitted into the ISO Outage Scheduling software. The LTOC group studies and schedules the Resource maintenance outage in accordance with OP-5. Whenever possible, a PO will be coordinated to reduce congestion costs.

OP-5 and ISO New England Manual for the Forward Capacity Market (FCM) Manual M-20 (Manual M-20) describe the submittal and evaluation of outage requests. SOP-OUTSCH.0030.0010 - Evaluate Resource Outage Requests details the process used by ISO in evaluating outage requests.

The approved Resource outage requests are compiled and the information processed to produce the AMS in accordance with this procedure.

	© ISO New England Inc. 2024	Procedure: Perform Long Term Resource Outage Coordination
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3. Responsibilities

> **NOTE**
>
> For the purposes of this procedure, a long term Resource outage request or PO is defined as an outage request submitted to ISO greater than or equal to 15 days before the proposed outage start date.

1. In conjunction with the LCCs and Resource Lead Market Participant (Lead MP) (or designee), the Director, Operations Support Services (OSS) is responsible for verifying actions specified in this procedure are adhered to for the mitigation of risk.

2. The Manager, Long-Term Outage Coordination is responsible for creating and responding to relevant Application Modification Requests (AMRs) while developing corrective actions to resolve discrepancies.

3. The Resource Analyst (RA) is responsible for conducting seasonal assessments that identify forecast transmission system reliability, operating risks and capacity margins for both local and system requirements and that the assessments are consistent with the established North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council, Inc. (NPCC) Winter and Summer assessments.

4. The RA is responsible for:

   - Overseeing the Resource Outage Request Submittal Process

   - Coordinating each Resource Outage Request with the applicable LCC

   - Assessing each Resource Outage Request (including any reliability and OPCAP reviews)

   - Monitoring the opamoreq@iso-ne.com mailbox (shared among all Resource Outage Request Outage Coordinators) and performing any action as required by those e-mails

   - Manually publishing the AMS, if required

   - Preparing the monthly COO Report

   - Performing OPCAP analyses

   - Notifying the applicable Lead MP of any scenario that may affect their Resource output

   - Conducting transmission system reliability analysis and forecasting capacity margins for both local and system requirements and assisting in identification of potential operational risks when forecasting system conditions.

4. Controls

1. A Lead MP receives only the outage data pertaining to the particular Resource for which it is the Lead MP.

2. The Manager, Long-Term Outage Coordination responds to relevant AMRs and performs corrective actions that are required to resolve discrepancies.

3. The Manager, Long-Term Outage Coordination supports monthly meetings as needed to respond to relevant AMRs and other discrepancies and to identify corrective actions.

4. Resource outage requests are evaluated using appropriate tools for analysis.

5. ISO personnel performing a Resource outage request evaluation is designated by the Director, OSS.

6. ISO outage request process is performed in accordance with the times specified in OP-5.

7. Evaluated POs are stored in the ISO Outage Scheduling software.

5. Instructions

5.1 Resource PO Request Submittal and Assessment Process

5.1.1 Resource PO Request Submittal

1. In accordance with OP-5 and in the time frames indicated, each Resource Lead MP (or designee) shall perform the following:

   A. Submit each Resource PO request in the ISO Outage Scheduling software

   B. Provide all information required

2. To submit the Resource PO request:

   A. Each Lead MP shall enter all the applicable information into the ISO Outage Scheduling software.

      (1) Outage Priority

      (2) Impacted Market Asset

      (3) Planned Start Time

      (4) Planned End Time

      (5) Outage Cause

      (6) Constraint Type [Out-of-service (OOS) or Reduction]

      (7) Amount of MW OOS or Reduced

      (8) Description of work to be performed

      (9) If the Resource is a Blackstart Resource, determine if the Resource will provide Blackstart Capability during the outage

> **NOTE**
>
> When an outage request has been entered into the ISO Outage Scheduling software it is in the Preliminary state and is available for the applicable LCC review.

   B. The applicable LCC shall determine if the Resource is required for either reliability or capacity in the applicable LCC local area

	© ISO New England Inc. 2024	Procedure: Perform Long Term Resource Outage Coordination
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	Revision Number: 7
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(1) If the LCC determines the Resource outage is allowed to proceed, the LCC shall approve the outage request and the outage request enters the "Submitted" state and is available for ISO review.

(2) If the LCC determines it **cannot** allow the Resource outage to proceed, the LCC shall deny the outage request and ISO takes **no** action on the outage request.

3. When a Resource outage request is submitted into the ISO Outage Scheduling software by the LCC, the RA shall perform an assessment of the PO request that includes the following:

A. A calculation of the New England OCM using the LTOCM software

(1) If this calculation determines that the OCM will become negative due to the PO under evaluation, at any time during the duration of the PO, the PO shall be Denied.

B. An evaluation of each Resource PO in an import or export constrained area for local capacity needs and/or in an area sensitive to local Resources for voltage.

C. A transmission assessment for each Resource PO, in accordance with the requirements of SOP-OUTSCH.0030.0025 - Perform Long Term Outage Coordination Transmission Confidential.

D. Verify the Planning Department has approved any request to remove/replace an Automatic Voltage Regulator (AVR) or a Power System Stabilizer (PSS) and forward the request to the OSS group for technical and voltage evaluation during the OOS period.

5.1.2 Evaluate, Approve and Deny Resource Outage Request

NOTE

Based on OP-5, the RA evaluates each Resource PO request submitted to ISO by an LCC for up to two years in advance. For a Resource outage request to be considered a PO, the outage request must be submitted by the Lead MP in the ISO Outage Scheduling software at least 15 calendar days in advance of the PO start date.

1. The RA shall use the priority dates to determine the sequence used to evaluate Resource PO requests.

2. The RA shall change the status of the Resource PO request from "Submitted" to "Study" as follows:

A. Sort the Resource POs in ascending "Priority Date" to display the order in which they are to be processed.

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term*
	Process Name: Capture and Evaluate Outage Requests	*Resource Outage Coordination*
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

B. Open the Resource PO request with the highest priority.

C. Click on the "Check Conflict" button to see if there is a Transmission or Resource outage that conflicts with the PO request.

    (1) If there is a conflict, perform the necessary evaluation and determine if the current Resource PO is to be Approved or Denied.

3. The RA shall identify any system reliability effects of a submitted Resource PO request that is related to currently approved Resource POs.

NOTE

When evaluating a Resource PO, the effect of the outage on each adjoining area is also analyzed.

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4. If the proposed Resource PO conflicts with another Approved, or Implemented Resource PO and **cannot** be approved by ISO, the RA shall:

A. Notify the Lead MP of the conflict

B. Negotiate a more favorable timeframe

5. To re-evaluate a new timeframe, the RA shall open the ISO Outage Scheduling software and perform the following:

A. Place the proposed Resource PO in "Negotiate"

B. Repeat steps 5.1.2.4.A and 5.1.2.4.B for the new dates.

6. The RA shall perform a reliability review to determine if the proposed Resource PO request conflicts with a transmission outage by performing the following:

A. Enter the proposed Resource PO requested start and end dates in the "Transmission Outages" display.

B. Set the "Status" filter to show "Submitted, Negotiate, Study, Interim Approved, Approved, and Implemented"

C. Select the applicable LCC and check for "Transmission Outages" that have the Resource listed as "Generation Must Run" or "Generation Limitation".

    (1) If the Resource is listed as Must Run for any transmission outage the PO is Denied, unless another Resource(s) can be used to meet the Must Run requirements.

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term Resource Outage Coordination*
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
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(2) If the Resource is listed as "Generation Limitation" on any transmission outage, the PO is Approved.

D. If the Resource is in close proximity to an interface, select each applicable neighboring LCC.

   (1) Enter the proposed Resource PO requested start and end dates and repeat steps 5.1.2.6.C.1 & 5.1.2.6.C.2.

   (2) Determine if the Resource PO request causes a reliability issue by considering its effect on each transmission outage.

   (3) If the Resource is required for any previously evaluated transmission outage, the Resource PO is Denied.

NOTE

Per OP-5, whenever possible, transmission and Resource outages will be coordinated to reduce Congestion Costs. For importing areas, an economic Resource within that area should **not** be scheduled for an outage simultaneously with any transmission facilities that significantly support area import capability. For an exporting area, a Resource outage within that area should be coordinated coincident with the outage of transmission facilities that significantly support that area's export capabilities.

An example of a Resource PO conflict with a transmission facility outage is when any transmission outage requires a Resource being proposed for that outage to be on-line or to be a Must Run.

E. If the proposed Resource outage conflicts with an "Interim Approved", "Approved", or "Implemented" transmission outage, Deny the Resource PO and:

   (1) Notify the Lead MP of the conflict

   (2) Negotiate a more favorable timeframe

F. If there are Resource limitations due to transmission, approve the Resource PO request, unless it has to be Denied due to system capacity.

7. The RA shall update the Reliability Review section in the proposed Resource outage request as follows:

A. Click on the "Studies" tab.

B. Enter notes in the Reliability Review section

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term*
	Process Name: Capture and Evaluate Outage Requests	*Resource Outage Coordination*
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

8. The RA shall conduct an OPCAP assessment on the proposed Resource outage request as follows.

   A. With the Access Rights of a business user, open LTOCM.

   B. Use LTOCM to calculate the LTOCM OCM by locating at the top of the screen and clicking on the "Create New Case" icon.

NOTE

A new case is to be created with the start date and end date for the period to be evaluated [usually the period to be evaluated is from today (i.e., the start date) to 2 years out (i.e., the end date)]

   C. To evaluate the pending Resource outage request, select the 50-50 Peak Load Exposure (PLE) Demand Forecast.

      (1) Under "Case Name", name the case.

      (2) Click on the "Create New Case" icon.

   D. To evaluate an outage, verify Pending Outages on the "Study Type" drop down menu display

      (1) Enter the start date and end date for the period to be evaluated [usually the period to be evaluated is from today (i.e., the start date) to 2 years out (i.e., the end date)].

      (2) Under the "Include Outage Option" drop down menu, verify "Max Outage Per Day" is displayed.

NOTE

The "Load Case Inputs" button will gather outage data from the ISO Outage Scheduling software and Resource/Asset CSO data from the Forward Capacity Tracking System (FCTS).

   E. Click on the "Load Case Inputs" button and after verifying the case inputs have been loaded, click on "Run Study" to run the case

   F. Review the Case Outputs and perform the following:

      (1) Click on the "Select Period" drop down and click on "Weekly"

      (2) Scroll the side scroll bar downward and view the entire column to see the Weekly negative results in the "OpCap Margin MW" column.

	© **ISO New England Inc. 2024**	**Procedure: Perform Long Term Resource Outage Coordination**
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	**Revision Number: 7**
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(3) Approve the PO if the OCM evaluation results in a positive LTOCM or Locational Operable Capacity Margin (LOCM)

(4) **No** further action is needed if there are **no** negative capacity margins in the outage period and the outage can be Approved.

(5) Update the "Operable Capability Review" section within the proposed Resource outage request in the ISO Outage Scheduling software by performing the following:

    a.   Open the ISO Outage Scheduling software.

    b.   Open the proposed Resource PO request.

    c.   Click on the "Studies" tab.

(6) Click on the "ISO Generation Studies" tab and enter applicable notes and capacity margins as needed.

NOTE

Informational Resource outage requests are a subset of outages that may need to be evaluated. A Lead MP enters an Informational outage request if the Resource does **not** have a CSO for the period of the outage or if the outage is small enough to **not** impact the CSO (e.g., A 100 MW wind farm has a CSO of 20 MW and the outage is only for 6 MW). An outage that is entered as Informational needs to be evaluated if the unit has an obligation under ISO New England Inc. Transmission, Markets and Services Tariff Section II Open Access Transmission Tariff (OATT) Schedule 2 Reactive Supply and Voltage Control Service, and is needed to provide voltage support to an area.

5.1.3 Calculate the LTOCM for Resource PO Evaluations

1. Once the data inputs have been entered, the RA shall calculate the LTOCM using the LTOCM software by performing the following steps:

    A.   Open the LTOCM software as a Business User.

    B.   Select the "Create New Case" button located at the top of the screen and based on the timeframe that needs to be studied, enter the "start" date and "end" date

    C.   For evaluating pending Resource outage requests, select the "50-50 PLE Demand Forecast".

    D.   Under "Case Name", name the case , include your initials and the date range used in the study and any other relevant information

    E.   Click the "Create Case" button

NOTE

Clicking on the "Load Case Inputs" button will load outage data from the ISO Outage Scheduling software and Resource/Asset CSO data from FCTS.

F. Click the "Load Case Inputs" button and once the case inputs have been loaded, verify the "Case Input" tab is visible.

G. Run the case by clicking the "Run Case" button at the top of the screen, and when the run is complete, verify the "Case Output" tab is visible and the Case State changes to "Solved".

2. If the proposed Resource outage has an unacceptable OCM the RA shall perform the following:

A. Notify the Lead MP of the issue

B. Negotiate a more favorable timeframe

C. Restart the steps in section 5.1.3.1. to evaluate new timeframe:

(1) The RA shall change the status of the proposed Resource outage request to "Negotiate" until a decision is made to either reposition or Deny the outage.

NOTE

Often the status of the PO will change to "Interim Approved" first. POs should **not** be left in the Interim Approved state, but should be moved to "Approved" once the decision is made that the PO can occur.

3. The RA shall Approve the proposed Resource outage request by performing the following:

A. Open the ISO Outage Scheduling software and perform the following:

(1) Open the proposed Resource outage request.

(2) Click on the "Studies" tab.

(3) Click on the "ISO Generation" tab.

(4) Enter applicable notes in the Reliability Review section.

(5) Select "Approved" and verify the status of the proposed Resource outage request changes from "Study" or "Negotiate" to "Approved".

5.1.4 OP&A Maintenance Email Actions and Resource Lead MP Notifications

1. The RA shall change outage requests made to previously submitted Resource outages through the "OPandA Maintenance Outage Requests" (opamoreq@iso-ne.com) shared mailbox (OPandA mailbox) by performing the following:

> **NOTE**
>
> The RA is responsible to monitor the OPandA mailbox for emails from any Lead MP with changes to previously submitted Resource outage requests.

   A. From the "OPandA Maintenance Outage Requests" shared mailbox, open each Lead MP email.

   B. Review each outage request number, dates and times, Asset Name or ID information that is being changed.

   C. For each outage request change email perform the following:

      (1) Convert the email into a PDF file and attach it to the Resource outage request in the ISO Outage Scheduling software.

      (2) Save the PDF file.

   D. Open the ISO Outage Scheduling software and perform the following:

      (1) On the menu bar, Click on "View".

      (2) In the drop down menu, click on "Generation Outage Request"

      (3) In the "View Type", Click on the "Overall" button

      (4) Verify "<default>" is displayed the "View Definition" drop down box.

      (5) Enter the previously submitted Resource outage request start and end date range.

      (6) Set the "CC/Console" value to the LCC responsible for the Resource in the previously submitted Resource outage request

      (7) In the "Asset Name" or "Asset ID" column, click on the desired Resource "Filter" button.

(8) After verifying the previously submitted Resource outage request is identified, and if a date change to the previously submitted Resource outage request is required, change the Planned start and/or Planned end dates using the following rules:

    a. Date changes that shorten the outage duration (either start or end date or both) are made immediately and the Lead MP is notified that the date changes were processed.

    b. Date changes that change the outage time frame or lengthen it, fall into two categories and are to be handled accordingly:

        i. If the date changes are being requested in response to an ISO or LCC request to align a Resource outage with a transmission outage, the date changes are made by the RA and the outage retains its priority.

        ii. If the date changes are being made solely at the request of the Resource MP, the existing outage is cancelled and the Resource MP submits a new PO request with the new dates. The priority of the original PO is **not** retained in this case.

        iii. If the date change consists of an extension of the current outage dates, the Resource MP can chose one of the two following options:

            • Cancel the current outage and submit an entirely new request

            • Keep the current outage (and its priority date) and submit a new request only for the additional time

(9) In the Lead MP email, select "Reply to All" to notify the Lead MP that the PO has been updated.

NOTE

The RA will be responsible to monitor the OPandA mailbox for any email from a Lead MP changing a previously submitted Resource PO request.

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2. The RA shall process each cancellation request for an outage received through the OPandA mailbox by performing the following:

A. From the OPandA mailbox, open the Lead MP email.

B. Review the outage request number, dates and times, Asset Name or Asset ID information for the cancelled outage.

C. For each outage cancellation request email, perform the following:

   (1) Convert the email into a PDF file and upload it to the Resource outage request in the ISO Outage Scheduling software.

D. Open the ISO Outage Scheduling software and perform the following:

   (1) Click on the "Request Summary" tab

   (2) At the bottom right of the screen, click in the "Cancel" box and verify a "Cancel Outage" box appears

   (3) In the "User Type" drop down menu, click on the "LCC/GO User"

   (4) Select a reason code in the "Reason Code" drop down menu

   (5) Select a reason sub-code in the "Reason Sub-code" drop down menu

   (6) In the Comments section enter the Lead MP name and contact information and the Resource PO cancellation request date

   (7) Click in the "Cancel Outage" box

   (8) Click in the "Save Changes" box

   (9) Reopen the Resource change request email in the OPandA mailbox.

   (10)   Select "Reply to All" to notify the Lead MP of the Resource outage request cancellation

	© ISO New England Inc. 2024	Procedure: Perform Long Term Resource Outage Coordination
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	Revision Number: 7
	Procedure Owner: Andrew Kopacka	Effective Date: May 22, 2024
	Approved By: Director, Operations Support Services	Review Due Date: May 22, 2026

5.1.5 Enter Transmission Constrained Down, and Transmission Constrained Up Requests in the ISO Outage Scheduling Software

> **NOTE**
>
> Transmission Constrained Up (TCU)/Transmission Constrained Down (TCD) is a Transmission Constrained outage request resulting from a reliability study that identifies a need to restrict or must run a Resource. The restriction/must run can be due to a thermal or a stability limitation. Once a TCU/TCD is identified, the RA enters an outage request in the ISO Outage Scheduling software and refers to this information in the ISO Transmission Outage.
>
> During the LTOC process, only TCDs are created to reflect a reduction in available capacity. TCUs will be created as needed in the Short Term Outage Coordination process, however, the LT Outage Coordinator still makes the relevant notifications.

1. The LTOC Outage Coordinator shall evaluate the need for a TCD outage request as follows:

   A. Open the relevant transmission outage in the ISO Transmission Outage Scheduling software.

   B. Check the recall time of the outage:

      (1) If the recall time is 4 hours or less, a TCD is **not** entered and the Resource is considered fully available for capacity during the LTOC process.

         a. Notify the Lead MP that the affected Resource may be limited.

      (2) If the recall time is more than 4 hours, enter a TCD for each affected Resource and verify the applicable Resource Lead MP was notified of the restriction.

2. The LTOC Outage Coordinator shall enter a TCD as follows:

   A. Open the relevant transmission outage in the ISO Outage Scheduling software.

   B. On the "Short Term Study" tab, select the Resource that requires entering a TCD.

   C. Click on the "Create TCD" button and a blank Resource outage request window will open for the selected Resource.

D. Enter the necessary information, including but **not** limited to the following:

(1) Dates and times of the outage (new Resource outage requests always default to the current day).

(2) Resource restriction value

(3) Reliability Area

NOTE

TCU and RMR requirements are **not** entered into the ISO Outage Scheduling software in the long term process, however, the necessary notifications are made to the Resource.

NOTE

It may be necessary to enter two TCD applications if the outage spans the winter and summer capability periods since the ISO Outage Scheduling software does **not** allow one request for both periods.

NOTE

The below notification is made by the RA and is made to the Lead MP.

The contact information can be found by searching the Asset Name or Asset ID in the Customer and Asset Management System (CAMS).

E. Interim Approve the TCD application

F. The RA will Approve the TCD application once sufficient capacity margins are verified

G. Record notification data in the transmission outage request as follows:

(1) Click on the "Request Details/Approval" tab to enter the notification.

(2) Click on the "Add" button in the "Notifications" section.

(3) Select "Notified Gen".

H. Enter the name of the Lead MP

I. Enter the e-mail or telephone number used to contact the Lead MP.

NOTE

Typically, "Success" will be chosen, since an entry would **not** be made unless a successful contact was made with the Lead MP.

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(1) Click on the "Accepted/Result" drop down menu and select one of the following statuses:

    a. Success

    b. Voice Mail

(2) In the "By/When" section, the date and time is filled in automatically by the ISO Outage Scheduling software.

(3) If applicable, enter any pertinent information in the "Comments" section.

(4) To complete the update, click on the "Save Changes" button.

5.2 Operable Capacity Analysis

5.2.1 Open the LTOCM Software

> **NOTE**
>
> The LTOCM calculation is used to evaluate Resource outage requests as defined in OP-5 and is included in each publication of the AMS.
>
> In addition, the LTOCM calculation is used for the monthly COO slide presentation materials for the Participants Committee and ISO Board meetings. The slide presentation focuses on a three month look-ahead and the summer and winter capacity outlooks.

> **NOTE**
>
> A shortcut should be set up to perform the actions performed in the following steps. Once the permissions are granted, a user should be able to run the software as either a Business User or an Admin.

1. To open the LTOCM software, the RA shall run the CapacityAnalysis.exe file at the following folder: \\rtsmb\LTOCM

2. The RA shall log in as either Administrative or Business user, depending on the function to be performed.

5.2.2 Enter LTOCM Data Adjustment

NOTE

LTOCM has various options for entering data to represent system conditions. Most of the data is automatically updated daily, however some data will be changed by direction of management. This section will describe the changes on each tab of the input screen if needed.

System Adjustments are values that are **not** changed very often and therefore changes should be entered in the "Admin" role of LTOCM.

NOTE

The following data can be entered on the System Adjustments page:

Monthly Values include:

- Internal Combustion Unit (ICU) Derate Factor
- Active DR Performance Factor
- Excess Capacity Adjustment MW
- Non CSO Available Supply Adj MW
- Allowance for Unplanned Outages
- Operating Reserve Required
- Non Commercial Adjustment MW

The only weekly value is the "Generation at Risk Due to Gas Supply" and is supplied by the Forecast & Scheduling group; this is changed whenever new values become available. Currently only the 50/50 PLE Demand Forecast values are entered in LTOCM.

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1. Non Commercial Capacity Adjustment values are automatically updated daily and shall be verified by the RA. These results can be adjusted if needed.

2. All other System Adjustments data shall be changed by a directive from the Manager, LTOC.

    A. System Adjustments data shall be changed as follows:

    (1) Click in the cell within LTOCM

    (2) Enter the new value

B. Changes to Unplanned Outages MW data shall be consistent with the values in Table 1 (below):

TABLE 1

Month	Monthly Allowance for Unplanned Outages (MW)
January	2800
February	3100
March	2200
April	2700
May	3400
June	2800
July	2100
August	2100
September	2100
October	2800
November	3600
December	3200

C. The RA shall enter Load Forecast data log into LTOCM as Administrative user and perform the following

(1) When updated information is available from System Planning, the RA shall enter and update the 50/50 and 90/10 PLE demand load forecasts and the 50/50 Transmission Study load forecasts as follows:

a. Under the Load Forecast tab, select the Load Forecast type to update and filter on.

b. Enter the new daily load forecast representing the peak load for the day directly on this screen.

c. Repeat steps 1-3 for all other Load Forecast types that need to be updated.

(2) To use a .csv file to load the data, the RA shall perform the following:

a. Create the .csv file from the data provided by System Planning

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term Resource Outage Coordination*
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
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> **NOTE**
>
> The file will have two columns, the first is the date and the second is the load.

    b. In LTOCM, on the Loads Forecast tab, enter the date range at the top and filter.

    c. Click on "autofill" to populate default data and verify the data fields are created.

    d. Click the "load data from file" button and verify the file has been uploaded.

D. As an Administrative user, the RA shall enter "Location Setup Data" data as follows:

> **NOTE**
>
> There are three tabs under this heading, though only two receive updates: Dispatch Zone and Reserve Zone.

    (1) To make the necessary adjustments on each of these pages, click in the field and enter the new value.

    (2) For Dispatch Zones and Reserve Zones, enter the "Percentage of System Load" value that is provided annually by System Planning.

E. For capacity analysis, the RA shall change the no Load Zone values for FCA Cleared Export and Excess Capacity Adjustments.

> **NOTE**
>
> The Locational Limits for the Reserve Zones are generic N-2 limits and are based on historical data. If a Resource outage with an adverse impact is being evaluated, the Reserve Zone limits must be calculated for the specific outage period and entered into the evaluation case.
>
> The Locational Limits for the Dispatch Zones and Load Zones are N-1 limits and will be calculated for the specific outage period and entered as a Business User

F. To enter Locational Limits Data, the RA shall perform the following:

    (1) If desired, filter the "Locational Limits" data by zone, period (effective date and termination date) or by both.

(2) Enter the applicable "Locational Limits" for each Dispatch Zone, Load Zone and Reserve Zone.

NOTE

DR Activation Limit Data can be entered for four different levels: Dispatch Zone, Reserve Zone, Load Zone, and System Zone.

G. To update DR Activation Limit Data the RA shall enter the values designated in OP-5 Appendix B.

H. The outage status values are never changed.

I. If changes are made to the Approved Outages data, the RA (in Business User mode) shall enter data by selecting or deselecting outages according to the needs of a specific study.

J. If changes are made to the Pending Outages data, the RA (in Business User mode) shall enter data by selecting or deselecting outages according to the needs of a specific study.

NOTE

Even though the Outage Status data can be altered by making changes in Approved or Pending Outages data, there should **never** be a need to change these statuses.

K. If changes are made to the Outage Status data, the RA (in Business User mode) shall enter various statuses in either Approved or Pending Outages data.

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term Resource Outage Coordination*
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

5.2.3 Manually Calculate the LTOCM for the AMS and COO Report

> **NOTE**
>
> The Approved and Pending Outages are bridged from the ISO Outage Scheduling software and are **not** entered as part of LTOCM case setup.
>
> CSO data is bridged so it is **not** entered as part of LTOCM case setup.

1. If daily automatic publication of the AMS does not occur, the RA shall notify IT for problem resolution.

2. If IT cannot expeditiously solve the problem, and as directed by the LTOC Manager, the RA may manually create and publish a daily AMS case as follows:

   A. Open the LTOCM software as a Business User.

   B. Select the "Create New Case" button located at the top of the screen and verify a new display appears to enter the required parameters.

   C. Based on the timeframe to be studied, enter the "start" date and "end" date. (The end date must be a Friday for the data to populate correctly.)

   D. For both the AMS and the COO report, select the "50-50 PLE demand forecast.

      (1) The AMS case and one (1) COO case will be run with all outages included.

      (2) A second COO case will only include the outages for units that are on the "Gas at risk due to gas supply" list.

      (3) For the COO report, the first case is re-run with the 90/10 PLE demand forecast, but only the load numbers from that case will be needed.

   E. Under "Case Name", name the case with the following format:

      2 or 3 character initial._yymmdd_Month of Publishing

      and include the report(s) for the study being performed.

      For example: If performing a study for the COO and AMS report for October, the format to use is:

      XXX_YYMMDD_October_COO_AMS

   F. Verify the "Include Outage Option" drop down displays "Max Outage Per Day"

	© ISO New England Inc. 2024	Procedure: Perform Long Term Resource Outage Coordination
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	Revision Number: 7
	Procedure Owner: Andrew Kopacka	Effective Date: May 22, 2024
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G. Click the "Create Case" button and verify the Case State changes to "Created".

H. Click the "Load Case Inputs" button on both cases simultaneously and when the case inputs have been loaded, verify the Case State changes to "Modified" and the "Case Input" tab is visible at the top and do **not** reload the case inputs.

I. Run the case by clicking the "Run Study" button at the top of the screen, and when the run is complete, verify the "Case Output" tab is visible at the top and the Case State changes to "Solved".

J. Check the Case Details and determine if there are any Case Violations.

(1) From the "System Results" tab:

a. At the top of the screen, change the "Selected Period" to "Weekly"

b. Select all the data on this tab

5.2.4 Manually Create Excel Operable Capacity Margin Table and Graph for AMS Report

1. Using the LTOCM copy feature, the RA shall copy and paste the data from the cases into a new blank Excel spreadsheet, the output from each case onto a separate sheet, and perform the following:

A. Name the sheets "All outages", "gas only", and "90-10".

B. Round both tabs of the LTOCM data to whole numbers.

C. Copy and paste the rounded "Total Outage MW" values from both the "All outages in" and the "gas only" output into a new tab.

D. The "Total Outage MW" values from the rounded "minus gas" values are now your total "non-gas fired outages". Multiply this number by .95 to get the final CSO values.

E. The outages in the "gas only" case will be subtracted from the "gas at risk due to gas supply" number.

(1) If the result is greater than zero, the result will be posted in the "Gas at Risk MW" column.

(2) If the result is 0 or less, then 0MW will be entered in this column.

F. Hide the rows representing less than 15 days in advance and greater than the end of the current FCM procurement period to include only long-term outages that fall into the current AMS report period.

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Process Name: Capture and Evaluate Outage Requests	*Resource Outage Coordination*
Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

G. Save the file in the AMS report folder.

NOTE

The template Excel file used will be either one created for the last AMS publication or the last COO presentation materials. Use the more recent of the two as a starting point. Each month the OPCAP analysis will be calculated for the COO report.

---

3. The RA shall create the Excel OCM table and graph as follows:

A. Copy the most recent Excel OCM spreadsheet for the 50/50 PLE demand forecast.

B. Save the copied file as Month YYYY AMS 50-50 MMDDYY where:

- MMDDYY is the month, day and year when the report is published.

- YYYY is the edition year, e.g., 2024

NOTE

The files for the AMS report are stored on the \\iso-ne.com\shares\ams file server under the folder titled with the year and labeled AMS. For example 2023-24 AMS, in a sub folder for the current month.

---

4. The RA shall update the date in the OPCAP spreadsheet to the AMS publication due date.

A. The following data needs to be collected in order to compile the report

(1) The most current CSO data will be provided by the FCM Monthly Auction outage coordinator. This includes the latest Resource CSOs. The Resource CSOs will be added in the "Available Opcap MW" column.

(2) The most current gas-at-risk numbers will be provided by the Forecast & Scheduling group. The spreadsheet with the numbers is saved in the AMS fileshare in the "Gas gen at risk" folder. If the numbers have **not** been updated in the recent past, check with the Forecaster to find out if newer ones are available.

(3) Any Highgate or Phase II outages are to be entered into LTOCM under Admin and are pulled into the case automatically.

a. Check these outages for accuracy.

b. Take any capacity backed sales on external ties into account [e.g., 100 MW firm export on Cross Sound Cable (CSC)].

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term Resource Outage Coordination*
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

NOTE

Though outages on the AC ties with NBP-SO or NYISO generally do **not** reduce the CSO on these interfaces, the impact should be evaluated.

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(4) Non-commercial Resource MWs are supplied by the Asset Registration & Auditing business unit and updated monthly.

B. From the Excel spreadsheet containing the LTOCM System Results data, copy and paste special values for all of the data needed into the new AMS OPCAP spreadsheet

C. Verify the notes at the bottom of the OPCAP spreadsheet are up-to-date and accurate.

D. Verify the graph reflects the intended time period and data.

E. Verify all the data in the spreadsheet and the graph.

F. Save the Excel OPCAP spreadsheet containing the table and the graph in the AMS report folder.

5. The RA shall create a .PDF version of the OPCAP spreadsheet and graph from the Excel OPCAP spreadsheet and save them in the AMS report folder.

5.2.5 Create Excel Operable Capacity Margin Table and Graph for COO Report

---

NOTE

The most recent Excel template file is either the one created for the last AMS publication or the last COO presentation materials. The more recent of the two is used as a starting point.

---

1. To create the PowerPoint OCM table and graph, the RA shall collect the following data:

A. The output from both the 50/50 and the 90/10 LTOCM analyses, with the numbers rounded and all decimals removed

B. The latest values from FCTS

C. Any Highgate or Phase II outages that affect the CSO from the ISO Outage Scheduling software, and any firm capacity export numbers

D. The latest "Gas at Risk due to Gas Supply" Seasonal Claimed Capability (SCC) and CSO numbers from the Forecast & Scheduling group for both the 50/50 and 90/10 PLE demand forecast.

	© **ISO New England Inc. 2024**	**Procedure: Perform Long Term Resource Outage Coordination**
	Process Name: Capture and Evaluate Outage Requests	
	Procedure Number: OUTSCH.0030.0040	**Revision Number: 7**
	Procedure Owner: Andrew Kopacka	**Effective Date: May 22, 2024**
	Approved By: Director, Operations Support Services	**Review Due Date: May 22, 2026**

E. The latest Total EMS Capability values from the ISO-NE external website at
https://www.iso-ne.com/isoexpress/web/reports/operations/-/tree/seasonal-claimed-capability

2. Using Table 2, the RA shall choose the season(s) to be provided in the report and perform the following actions:

Table 2

Report Created	Publish Month	Main Period	Secondary Period	Main Period Month(s)	Secondary Period Month(s)
January	February	Winter	Spring Preliminary	Feb - Mar	Apr - May
February	March	Winter	Spring	Mar	Apr - May
March	April	Spring	Summer Preliminary	Apr - May	June - Sept
April	May	Spring	Summer	May	June - Sept
May	June	Summer		June - Sept	
June	July	Summer		July - Sept	
July	August	Summer	Fall Preliminary	Aug - Sept	Sept - Nov
August	September	Fall	Winter Preliminary	Sept - Nov	Dec - Mar
September	October	Fall	Winter Preliminary	Oct - Nov	Dec - Mar
October	November	Fall	Winter	Nov	Dec - Mar
November	December	Winter		Dec - Mar	
December	January	Winter		Jan - Mar	

A. Update the date in the OPCAP table to reflect the COO report due date.

B. Use the LTOCM results in the output sheet as described in section 5.2.3.

C. Verify the data in the PowerPoint table equals the data on the LTOCM OPCAP spreadsheet.

(1) The graph is referencing the appropriate data from this OPCAP analysis, i.e., the "Study Week" is the x-axis and "Op Cap Margin after OP4 actions" is the y-axis.

(2) The x-axis label is updated to represent the time period being graphed and both axes are formatted to show all of the data.

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term*
	Process Name: Capture and Evaluate Outage Requests	*Resource Outage Coordination*
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

D. Select the graph tab in the OPCAP spreadsheet for both 50/50 and 90/10 PLE demand forecast and copy the applicable data into the PowerPoint presentation.

E. Verify the notes in the OPCAP spreadsheet are up to date and accurate.

3. To update the PowerPoint presentation the RA shall perform the following:

A. Open and save the latest COO PowerPoint in the current monthly Capacity Analysis folder

B. Update all the headers, dates, and titles throughout the presentation for the correct season(s) to be covered.

C. Update the "Highlights" slide with the correct data for the lowest week(s).

D. Update the 50/50 and 90/10 PLE load forecast lowest week overview slides with the appropriate numbers. The SCC value on the overview should be the value on the latest report posted at: https://www.iso-ne.com/isoexpress/web/reports/operations/-/tree/seasonal-claimed-capability

E. Copy and "paste special" "Picture (Enhanced Metafile)" the 50/50 and 90/10 PLE load forecast spreadsheets and charts into the PowerPoint presentation. It may be necessary to create new slides if the last presentation had only one season and the current presentation has two.

F. Review all the data and send the spreadsheet to the OPER AMS_COO distribution list to review and provide feedback on the data at least 3 business days before the due date provided by the COO office.

G. Make changes as needed in response to the feedback received from the OPER AMS_COO distribution list.

H. Verify the report again, including the group review and feedback, until everyone agrees that all the data is correct.

I. Send the report to the COO Report e-mail distribution list.

5.3   AMS Gantt Preparation

> **NOTE**
>
> The Market Sensitive AMS report includes a Gantt chart of all Resource outages that fall within the reporting period. This chart will **not** be published with the public AMS report.

1.   The RA shall create the AMS report Gantt Chart in the ISO New England Outage Scheduling software by performing the following:

   A.   Open a "generation outage requests" window

   B.   On the "Overall" menu choose the "LT-AMS Gantt Report" in the "View Definition" list

   C.   In the "Category" field choose FO, PO, OPO, STO, and TCD

   D.   Create the Gantt chart by clicking the "Gantt chart" icon

   E.   Select "Display the data in a weekly format" on the Gantt options pop-up

   F.   Once the Gantt chart populates, make adjustments if needed (usually just small formatting changes) and save it in the AMS folder on the server in the following format:

   MMDDYY AMS Month YYYY-YYYY Weekly Gantt chart

	© *ISO New England Inc. 2024*	*Procedure: Perform Long Term*
	Process Name: Capture and Evaluate Outage Requests	*Resource Outage Coordination*
	Procedure Number: OUTSCH.0030.0040	*Revision Number: 7*
	Procedure Owner: Andrew Kopacka	*Effective Date: May 22, 2024*
	Approved By: Director, Operations Support Services	*Review Due Date: May 22, 2026*

5.4   COO Report Preparation and Required OPCAP Analysis

> **NOTE**
>
> The preliminary report must be sent to the group for review at least 3 business days before the publication date.
>
> The COO Report PowerPoint presentation materials are created to support the NEPOOL Participants Committee (NPC) monthly meeting. The schedule reflecting the monthly due date is received by email from the COO office.

1. To prepare the COO Report and the required OPCAP Analysis, the RA shall perform the following actions:

    A. For the creation of the COO Report, use the time period from the monthly COO publication date plus 15 days through 3 months forward.

    B. In the OPCAP Analysis spreadsheet, showing the OPCAP table and graph, hide all weeks that are **not** in the time period covered by the report.

    C. Create the Excel files for the OPCAP tables and graphs by starting from the most recent analysis.

> **NOTE**
>
> There is a yearly Capacity Analysis folder where there are monthly subfolders containing files and data used to prepare the report. The files for the OPCAP tables and graphs and presentation PowerPoint slides are stored on the \\iso-ne.com\shares\ams file server under the current month folder under the year's capacity analysis folder.

    D. Open the current monthly OPCAP folder and copy the COO PowerPoint from the previous month.

    E. Find the latest 50/50 Reference Demand forecast OPCAP analysis spreadsheet(s) by comparing the most recent COO and AMS publications to create the OPCAP tables and graphs.

    F. Copy the most recent spreadsheet(s) into the current monthly OPCAP analysis folder as the starting point.

    G. Rename the files replacing the date in the file name with the new due date in the format YYMMDD.

NOTE

To update the OPCAP analysis refer to section 5.2, Operable Capacity Analysis.

H. Create the 90/10 OPCAP analysis spreadsheet from the 50/50 Reference demand created above by first copying the file to a file name with the format: YYMMDD_Operable_Capacity_Analysis 90-10.

I. Update the title on the OPCAP Analysis tab with 90-10 demand.

J. On each of the graph tabs, update the title to read 90-10.

   (1) Update the "Load Forecast" column in the OPCAP analysis tab with the 90-10 demand forecast

   (2) Update the "Generation at Risk due to Natural Gas" column on the OPCAP analysis tab with the value associated with extreme weather.

   (3) Update the OPCAP Summary PowerPoint slide(s) based on the results of the OPCAP analysis.

NOTE

If it is necessary to describe any further details regarding the assumptions used in any of the analyses, additional slides may be added. (For example, a separate slide has been used to detail the winter analysis assumptions for generation unavailable due to natural gas.)

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   (4) Review the presentation thoroughly and send a report to the OPER AMS_COO group email for their review.

   (5) Prior to the due date, e-mail the completed presentation materials to the COO department using the address in the COO Report email distribution list.

6. Performance Measures

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

- Corporate Goal for NERC Reliability Assessment Subcommittee (RAS) to review and report OPCAP assessment results for the winter and summer seasonal assessments.

- Corporate Goal for NPCC CO-12 Operations Planning Working Group to review and report OPCAP assessment results for the winter and summer seasonal assessments

7. References

ISO New England Inc. Transmission, Markets, and Services Tariff Section II Open Access Transmission Tariff (OATT) Schedule 2 Reactive Supply and Voltage Control Service

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

ISO New England Inc. Transmission, Markets, and Services Tariff Attachment D ISO New England Information Policy

ISO New England Manual for the Forward Capacity Market (FCM) Manual M-20 (M-20)

ISO New England Operating Procedure No. 5 - Resource Maintenance and Outage Scheduling (OP-5)

SOP-OUTSCH.0030.0010 - Evaluate Resource Outage Requests

SOP-OUTSCH.0030.0025 - Perform Long Term Outage Coordination Transmission Confidential

SOP-OUTSCH.0030.0070 - Long Term Outage Economic Analysis

SOP-OUTSCH.0050.0020 - Perform Complex Studies

8. Revision History

Rev. No.	Date	Reason	Contact
0	12/09/10	Initial draft procedure	Peter Bernard
1	02/22/2011	Globally made minor editorial changes (i.e., grammar, spelling, punctuation, etc); Deleted all directed action steps, sub-steps and NOTEs in Section 5.5 and replaced with a NOTE containing a table of Monthly Allowances for Unplanned Outages (MS) for all months of the year; Retired Attachment A	Peter Bernard
2	12/06/12	Biennial review by procedure owner; Headers and Footers, updated the required pertinent administrative information; Globally, updated for new Procedure Owner; Based on the biennial review, significant changes to the content of this SOP are required and this effort will require additional time. This new Revision is published with no changes to the content to document completion of the required review and that a new Revision is in progress.	Mike Courchesne
3	06/26/14	Biennial review by procedure owner; Complete re-write to delete all references to AMS spreadsheet and SAM software; Update ISO Generator Outage Scheduling to reflect use of CROW; Update all processes related to LTOCM to reflect the current practices; Update all processes related to the AMS and COO report creation and the analyses required for the reports to reflect current practices; Correct any spelling and grammatical errors found in the procedure	Mike Courchesne
4	06/04/15	Globally made editorial changes consistent with current practices and management expectations to be consistent in using present tense for directed actions and consistent use of grammar; Changes made Sections 3 and 6 to recognize current process of supporting and conducting seasonal assessments already established in the NPCC and NERC processes	Mike Courchesne
4.1	06/15/16	Biennial review completed by procedure owner requiring no changes; Made administrative changes required to publish a Minor Revision;	Mike Courchesne
Rev 5	06/12/18	Biennial review by procedure owner; Globally made editorial changes to be consistent with current conditions, practices and management expectations; Changes include modified language (e.g.,from generator to resource), process improvement updates, reporting changes/improvements, updating web links and general review; Added required corporate document identity to all page footers;	Mike Courchesne
5.1	06/10/20	Biennial review completed requiring no changes. Updated procedure owner in all headers	Andrew Kopacka / Norm Sproehnle

Rev. No.	Date	Reason	Contact
6	May 24, 2022	Updated procedure owner; Incorporated new LT Generation Coordinator role and responsibilities; Procedural updates based on completion of AMS Automation project; Updated AMS publication periodicity from monthly to daily; Removed voice recording Controls; Added Main and Secondary months to Table 2; Updated procedural steps to align with current work practices; Retired Attachments B and C;	Andrew Kopacka
7	May 22, 2024	Biennial review by procedure owner; Made minor administrative changes for document consistency; Globally changed LT Generation Coordinator to Resource Analyst (RA); Globally changed "CAPA" to "AMR"; Changed AMS COO report review period from 5 business days to 3 business days to reflect current business practice;	Andrew Kopacka

9.   Attachments

Attachment A. Retired (02/22/11)

Attachment B. Retired (mm/dd/yy)

Attachment C. Retired (mm/dd/yy)

Attachment A - Retired (02/22/11)

Attachment B – Retired (mm/dd/yy)

Attachment C – Retired (mm/dd/yy)