

MEMORANDUM

TO: NEPOOL Participants Committee Members and Alternates
FROM: Eric Runge, NEPOOL Counsel
DATE: September 27, 2018
RE: Revisions to Operating Procedure (“OP”) 21 and Appendix A to OP-21

At the October 4, 2018 Participants Committee meeting, you will be asked to vote to support revisions to OP-21 (Energy Inventory Accounting and Actions During an Energy Emergency) and Appendix A to OP-21 (Generator Survey) (collectively, the “OP-21/21A Revisions”).¹ At its September 26 meeting, the Reliability Committee voted based on a show of hands to recommend Participants Committee support for the OP-21/21A Revisions, with two Participants opposed and one abstention. This matter would have been on the Consent Agenda but for the timing of the Reliability Committee vote.

The OP-21/21A Revisions provide for an Energy Emergency Forecasting and Reporting process, including Forecast Alert Thresholds, incorporation of criteria for declaration of Energy Alerts and Energy Emergencies, related data collection provisions, and other associated revisions and clarifications.

The resolution below could be used for the Participants Committee vote on the Op-21/21A Revisions:

RESOLVED, that the Participants Committee supports the OP-21/21A Revisions, as recommended by the Reliability Committee, and as reflected in the materials distributed to the Participants Committee for its October 4, 2018 meeting, together with [any changes agreed to at the meeting and] such non-substantive changes as may be agreed to after the meeting by the Chair and Vice-Chair of the Reliability Committee.

¹ Materials related to this agenda item can be accessed here: https://www.iso-ne.com/static-assets/documents/2018/09/a8_2_op21_op21a.zip.



memo

To: NEPOOL Reliability Committee
From: Stephen George
Date: September 20, 2018
Subject: Revisions to Operating Procedure No. 21 (OP21) and OP21, Appendix A

At the September 26, 2018 Reliability Committee meeting ISO New England ("ISO-NE") will be requesting a vote on its proposed revisions to Operating Procedure No. 21 and Operating Procedure No. 21, Appendix A.

The proposed revisions to Operating Procedure No. 21 and Operating Procedure No. 21, Appendix A provide an energy forecasting and reporting framework to establish energy forecast alert thresholds. The proposed forecasting and reporting process informs the declaration of Energy Alerts and Energy Emergencies, which allow for proactive responses in advance of an Energy Emergency declaration. These proposed revisions are part of several ISO-NE initiatives being developed ahead of the 2018-19 winter period to provide improved market signals for incentivizing resource preparedness.

The specific proposal for the committee's consideration at the September 26 meeting has been presented in the meeting dates outlined below.

- July 12, 2018; agenda item #11.7: <https://www.iso-ne.com/event-details?eventId=134579>
- August 1, 2018; agenda item #2.5 & 2.6: <https://www.iso-ne.com/event-details?eventId=136586>

SEPTEMBER 26, 2018 | WESTBOROUGH, MA

REVISIONS TO OP-21 & OP-21A – Energy Inventory Accounting and Actions During An Energy Emergency & Generator Survey



Energy Emergency Forecasting and Reporting

Stephen George

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OP-21 & OP-21A Revisions Overview

Proposed Effective Dates: October 2018

The proposal to revise OP-21 and OP-21A was initially presented at the July 12, 2018 Reliability Committee meeting and focused on:

- Developing an energy forecasting and reporting framework to establish energy alert thresholds based on an energy assessment over the next 21 days of operation that includes fuel and emissions availability as well as anticipated fuel infrastructure availability and supplies
- Establishing Forecast Alert Thresholds issued by the ISO based on its energy assessment
- Using the forecasting and reporting process to inform the declaration of Energy Alerts and Energy Emergencies, which would allow for proactive responses in advance of an Energy Emergency declaration



Proposed Revisions

The proposed revisions to OP-21 reviewed with the committee fall into the following general categories:

- Incorporation of Energy Emergency Forecasting and Reporting Process, including Forecast Alert Thresholds
- Incorporation of criteria for declaration of Energy Alert and Energy Emergency
- Modified data collection frequencies
- Other revisions and clarifications

Additionally, revisions to OP-21A (Generator Survey) are being proposed to support the Energy Emergency Forecasting and Reporting Process



Overview of Changes

- A review of OP-21 and OP-21A redline changes made in addition to those initially presented at the August 1, 2018 RC meeting will be performed today.
- The following slides highlight the most significant changes.
- Gray text indicates language that was included in the initial OP-21 revision presented to the RC on 8/1 and **red text** indicates a subsequent revision.



OP-21 Revisions

Section I: Introduction

Location	Proposed Revision
Introduction	<p><i>Inserted additional language:</i></p> <p>This OP also documents the responsibilities of Lead MPs of applicable resources for completion of OP-21, Appendix A - Generator Survey (OP-21A), related communications and reporting requirements, and expectations for response related to an ISO declaration of an Energy Alert or an Energy Emergency. Nothing in this OP shall relieve Lead MPs from their obligations under the Tariff.</p>
Introduction (List of possible initiating conditions)	<p><i>Added to list:</i></p> <p>Prolonged, significant reductions of capability to import power into the New England region</p>



OP-21 Revisions

Section II: Process Overview

Location	Proposed Revision
II.A Data Collection Process Description	<p><i>Inserted effective date for changes to data collection (generator survey) process:</i></p> <p>Effective October 29, 2018, at the periodicity specified in Sections III.A, III.B, and III.C below, ISO shall distribute a blank survey form, OP-21A, to the Lead MP of each applicable resource.</p>
II.B Energy Emergency Forecasting and Reporting Process and Forecast Alert Thresholds	<p><i>Inserted effective date for ISO's Energy Emergency Forecasting and Reporting process:</i></p> <p>Effective November 26, 2018, or earlier if possible, ISO shall perform Energy Emergency forecasting and reporting...</p>



OP-21 Revisions

Section II: Process Overview, cont.

Location	Proposed Revision
II.B Energy Emergency Forecasting and Reporting Process and Forecast Alert Thresholds	<p><i>Inserted additional language:</i></p> <p>The Energy Emergency forecasts are non-binding as forecasted or expected conditions utilized in the development of the forecasts can change. It is the responsibility of the Lead MPs to take all actions to ensure that resources are able to meet applicable obligations under the Tariff.</p>
II.B Energy Alert and Energy Emergency Declaration Criteria	<p><i>Modified Energy Alert criteria (previously proposed criteria shown in redline format):</i></p> <p>ISO shall declare an Energy Alert, and take actions as described in Section III.B of this OP, when either of the following conditions exist:</p> <ul style="list-style-type: none"> • FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment, or • Any other reason(s) for which the ISO Chief Operating Officer (COO), or designee, determines that the actions described in Section III.B of this OP may mitigate the impact of an actual or forecasted energy deficiency. • FEEA3 is forecasted for at least 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment. <p><i>*note that duplicate language has been added in Section III.B.</i></p>



OP-21 Revisions

Section II: Process Overview, cont.

Location	Proposed Revision
II.B Energy Alert and Energy Emergency Declaration Criteria	<p><i>Modified Energy Emergency criteria (previously proposed criteria shown in redline format):</i></p> <p>ISO shall declare an Energy Emergency, and take actions as described in Section III.C of this OP, when either of the following conditions exist:</p> <ul style="list-style-type: none">• FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 1 through 5 of the 21-day energy assessment, or• Shedding of firm load under OP-7 is occurring or is anticipated to occur due to an actual energy deficiency resulting from a sustained shortage of fuel availability or deliverability to, or sustained environmental limitations on some or several of New England's resources, or• Any other reason(s) for which the ISO COO, or designee, determines that the actions described in Section III.C of this OP may mitigate the impact of an actual or forecasted energy deficiency. <p><i>*note that duplicate language has been added in Section III.C.</i></p>
II.B Energy Alert and Energy Emergency Declaration Criteria	<p><i>Inserted additional language:</i></p> <p>To the extent possible, ISO shall declare Energy Alerts and Energy Emergencies on a daily boundary.</p> <p><i>*note that similar language has been added in multiple locations in the OP</i></p>



OP-21 Revisions

Section II: Process Overview, cont.

Location	Proposed Revision
II.E Data Retention Requirements	<p data-bbox="508 321 597 1470"><i>Modified existing/inserted additional language (previous language shown in redline format):</i></p> <p data-bbox="659 352 748 1470">ISO shall retain all data submitted on OP-21A for not less than 36 months.</p> <p data-bbox="813 285 902 1470">In recognition of the sensitive nature of the information provided on OP-21 A, and the unique nature of ISO's request, ISO shall:</p> <ul data-bbox="967 279 1360 1470" style="list-style-type: none"><li data-bbox="967 279 1105 1470">• Use the information provided on OP-21A submittals solely for the purposes of identifying and addressing prospective energy deficiencies or related concerns that may exist.<li data-bbox="1170 279 1360 1470">• ISO shall treat submitted data as Confidential Information in accordance with the ISO New England Inc. Transmission, Markets, and Services Tariff, Attachment D - ISO New England Information Policy.



OP-21 Revisions

Section III: Conditions

Location	Proposed Revision
III.A Normal Conditions - Energy Emergency Forecasting and Reporting	<p><i>Inserted additional language:</i></p> <p>To the extent possible, for each instance where an Energy Emergency forecast alert threshold was met, the results shall include the reason(s) why the threshold was met.</p> <p><i>*note that similar language has been added in multiple locations in the OP</i></p>



OP-21 Revisions

Section III: Conditions, cont.

Location	Proposed Revision
III.B Energy Alert Conditions – Energy Alert Actions	<p data-bbox="505 1020 537 1470"><i>Inserted additional language:</i></p> <p data-bbox="594 695 626 1470">When an Energy Alert has been declared, ISO shall:</p> <ol data-bbox="643 260 894 1470" style="list-style-type: none"><li data-bbox="643 260 716 1470">1. Alert each LCC and surrounding Reliability Coordinator/Balancing Authority (RC/BA) of the Energy Alert.<li data-bbox="732 296 764 1470">2. Alert each Lead MP of the Energy Alert via a posting to the ISO's website.<li data-bbox="781 380 813 1470">3. Alert New England state regulators and officials of the Energy Alert.<li data-bbox="829 401 894 1470">4. Initiate daily data collection using OP-21A forms, and daily Energy Emergency forecasting and reporting. <p data-bbox="951 260 1114 1470">When an Energy Alert has been declared, each Lead MP shall evaluate actual and anticipated fuel supplies and environmental limitations and should consider taking action, as necessary, to replenish fuel supplies and/or mitigate environmental limitations.</p> <p data-bbox="1170 243 1382 1470">When an Energy Alert has been declared, each Lead MP and LCC shall evaluate scheduled maintenance or repair to transmission facilities or resources in the region that reduces the capability of a facility or resource to supply energy to the region and should consider taking action, if possible, to maximize availability of those facilities or resources.</p>



OP-21 Revisions

Section III: Conditions, cont.

Location	Proposed Revision
<p>III.B Energy Emergency Conditions – Energy Emergency Actions</p>	<p><i>Inserted additional language:</i></p> <p>When an Energy Emergency has been declared, ISO shall:</p> <ol style="list-style-type: none"> Alert each LCC and surrounding Reliability Coordinator/Balancing Authority (RC/BA) of the Energy Emergency. Alert each Lead MP of the Energy Emergency via a posting to the ISO’s website. Alert New England State regulators and officials of the Energy Emergency. Report the Energy Emergency to the U.S. DOE, using Form OE-417. Initiate daily data collection using OP-21A forms, and daily Energy Emergency forecasting and reporting. Request that each dual-fuel generator scheduled to operate voluntarily switch to operation on the fuel source that is not in short supply. Implement specific capacity and load relief measures available through actions of OP-4, excluding requesting New England State Governors reinforce appeals for voluntary load curtailment. <p>If actions 1-7 above do not result in the necessary relief from the forecasted Energy Emergency, or if there is insufficient time for those measures to provide relief, the following actions may be taken:</p> <ol style="list-style-type: none"> Implement a New England State Governors appeal in accordance with OP-4: Request New England State Governors to reinforce appeals for voluntary electrical load curtailment and the Power Warning Implementation. Under extreme conditions, ISO shall seek reliability relief through load shedding actions available through implementation of OP-7. <p>When an Energy Emergency has been declared, each Lead MP shall evaluate actual and anticipated fuel supplies and environmental limitations and should consider taking action, as necessary, to replenish fuel supplies and/or mitigate environmental limitations.</p> <p>When an Energy Emergency has been declared, each Lead MP and LCC shall evaluate scheduled maintenance or repair to transmission facilities or resources in the region that reduces the capability of a facility or resource to supply energy to the region and should consider taking action, if possible, to maximize availability of those facilities or resources.</p>



OP-21 Revisions

Section III: Conditions, cont.

Location	Proposed Revision
III. Cancellation	<p data-bbox="508 957 548 1470"><i>Inserted additional language:</i></p> <p data-bbox="610 384 699 1470">To the extent possible, ISO will cancel Energy Alerts and Energy Emergencies on a daily boundary.</p>



OP-21A Revisions Generator Survey

Location	Proposed Revision
Notes between questions 2004 and 2005	<p>This survey is being sent to generators that ISO New England is aware of having the ability to burn oil or coal.</p> <p>If this generator is not capable of burning oil or coal, please explain what changes have been made at the bottom of this survey.</p>



Conclusion

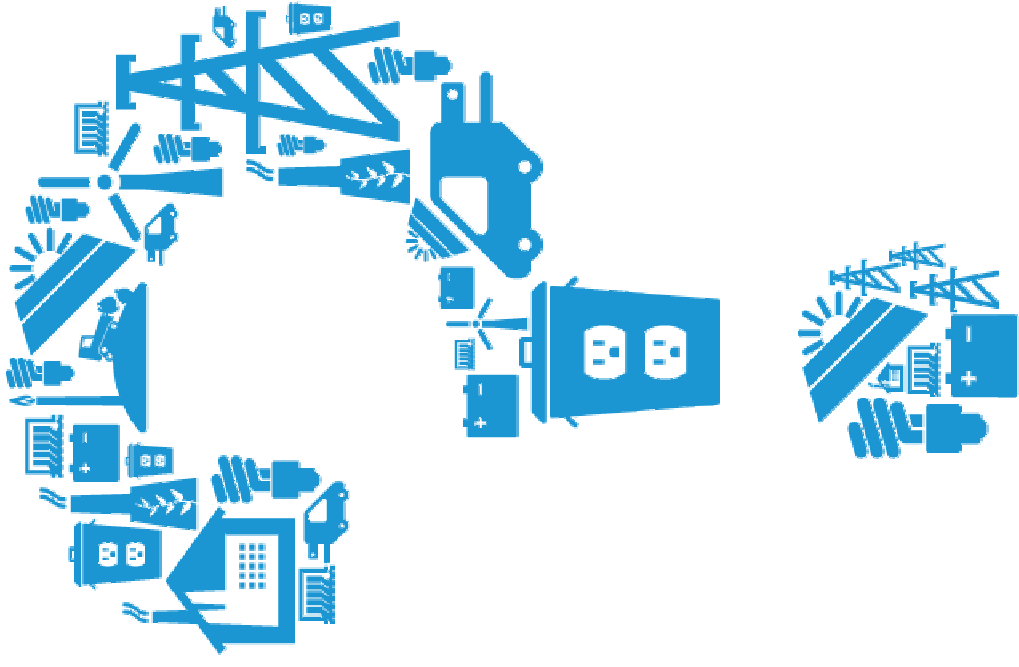
- The ISO is proposing revisions to the current OP-21 and OP-21A to support the Energy Emergency forecasting and reporting process which will trigger defined Energy Alerts and Energy Emergencies in order to proactively communicate potential energy deficiencies to regional stakeholders.



Stakeholder Schedule

Stakeholder Committee and Date	Scheduled Project Milestone
July 12, 2018 Reliability Committee	Initial presentation
August 1, 2018 Reliability Committee	Review of proposed OP-21 and OP-21A Revisions
September 26, 2018 Reliability Committee	VOTE
October 4, 2018 Participants Committee	VOTE





Questions



ISO New England Operating Procedures

OP-21 - Energy Inventory Accounting and
Actions During An Energy Emergency

ISO New England Operating Procedure No. 21 - Energy Inventory Accounting and Actions During An Energy Emergency

Effective Date: ~~June 1, 2018~~draft

References:

[Federal Energy Regulatory Commission \(FERC\)](#), Order [No. 587](#) - Standards for Business Practices of Interstate Natural Gas Pipelines; Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities

FERC, Order [No. 698](#) - Standards for Business Practices for Interstate Natural Gas Pipelines; Standards for Business Practices for Public Utilities

NAESB Standard WEQ-0011 Gas/Electric Coordination Standards

NAESB WGQ Business Practice Standards, Additional Standards; Gas/Electric Operational Communication

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, ~~Section~~-Attachment D - ISO New England Information Policy

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

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

ISO New England Operating Procedure No. 10 - Emergency Incident and Disturbance Notifications (OP-10)

*This document is controlled when viewed on the ISO New England Internet web site. When downloaded and printed, this document becomes **UNCONTROLLED**, and users should check the Internet web site to ensure that they have the latest version. In addition, a Controlled Copy is available in the Master Control Room procedure binders at the ISO.*

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Revision [54](#), Effective Date: ~~June 1, 2018~~draft

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OP-21 - Energy Inventory Accounting and
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Appendices:

Appendix A - Generator ~~Fuel Inventory Survey Form~~

Appendix B - Electric/Gas Operations Committee's (EGOC) Operations
Communications Protocol

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I. INTRODUCTION

This Operating Procedure (OP) documents the processes, and establishes the associated requirements for ISO New England Inc. (ISO) to: collect fuel availability information from Lead Market Participants to determine energy adequacy for the region's electric power requirements; and for communications and action in anticipation of and during an Energy Emergency as triggered by the ISO and as implemented by the ISO and the Local Control Centers (LCCs).

1. Collect fuel availability and environmental limitation information for each coal, oil, natural-gas fired, and any other resources that ISO determines to be necessary referred to as "applicable resource(s)" for the purposes of this OP, from each respective Lead Market Participant (Lead MP);
2. Forecast and report on expected energy availability over a 21-day look ahead period;
3. Trigger/Declare Energy Alerts and Energy Emergencies based on forecasted or Real-Time system conditions;
4. Take appropriate action in anticipation of, or during, an Energy Alert or Energy Emergency;
5. Communicate with interstate natural gas pipelines, Liquefied Natural Gas (LNG) import facilities, local gas distribution companies (LDCs), Designated Entities (DEs), and Lead MPs regarding all matters related to resource fuel availability and environmental limitations.

This OP also documents the responsibilities of Lead MPs of applicable resources for completion of OP-21, Appendix A - Generator Survey (OP-21A), related communications and reporting requirements, and expectations for response related to an ISO declaration of an Energy Alert or an Energy Emergency. Nothing in this OP shall relieve Lead MPs from their obligations under the Tariff.

Energy Emergencies (defined in Section III.C of this OP) (as defined in Section II.B of this OP) may occur at any time as a result of sustained national or regional shortages in fuel availability or deliverability to New England's resources. Such shortages of fuel may occur in many forms, including, but not limited to: severe drought, interruption to availability or transportation of natural gas, liquefied natural gas (LNG), oil, or coal. ISO will declare an Energy Emergency when it determines that the impact of a fuel shortage is projected to result in an anticipated or actual Capacity Scarcity Condition projected to last beyond the current operating day (i.e., for multiple days or longer) and that implementing the actions included in Section B of this OP would mitigate the impact of the fuel shortage. In response to a declaration of an Energy Emergency, ISO shall take action to operate the system in such a way as to preserve stored fuel resources in the region to minimize the loss of operable generating capability due to projected fuel shortages.

Any of the conditions listed below, or a combination of these conditions, may contribute to an Energy Emergency (this is not meant to be an all-inclusive list of possible initiating conditions):

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ISO New England Operating Procedures

OP-21 - Energy Inventory Accounting and
Actions During An Energy Emergency

- o One or more pipeline operational flow orders (OFOs) have been declared
- o Significant reductions of generation-resource capability due to natural gas related issues
- o Weather forecast for an extended period of cold or hot weather
- o Fuel delivery to a significant number of fossil fuel-fired generating resources is or may be impaired
- o Prolonged drought
- o Adverse weather conditions within the Gulf of Mexico, Western Canada, or regional shale gas basins.
- o Abnormal conditions at regional LNG import, satellite storage, or LNG trucking facilities
- o Extremely cold regional, national, or international weather conditions
- o Extreme storm conditions off shore in the Maritimes
- o Any viable threat to one or more of the interstate natural gas pipelines or LDCs supplying New England
- o Prolonged, significant reductions of capability to import power into the New England region
- o Any other serious threat to the integrity of the Bulk Electric System (BES) for which ISO determines that the actions of this OP may mitigate the impact

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A sustained environmental limitation on some, or several, of New England's resources may also contribute to an Energy Emergency.

Energy Emergencies are envisioned to last much longer than capacity deficiencies, which are managed through ISO New England Operating Procedure No. 4 - Actions During a Capacity Deficiency (OP-4) and, under extreme circumstances, through ISO New England Operating Procedure No. 7 - Actions in an Emergency (OP-7). Operable capacity deficiencies are typically experienced at seasonal peak load conditions or upon the occurrence of other emergent system conditions and tend to last for a few hours per event. Because fuel shortages and/or environmental limitations may impact New England's ability to fully meet system load and ten-minute operating reserve requirements for days, weeks, or months at a time, actions-ISO may need to take action in advance of a projected Energy Emergency to manage and preserve fuel supplies within the region. Unless ISO takes action to address projected Energy Emergencies, a fuel shortage and/or environmental limitations may lead to a significant loss of operating resource capacity and more extreme use of OP-4 and OP-7 actions.

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The objectives in-establishingof this OP are:

1. To facilitate strong lines of communication between among ISO, interstate natural gas pipelines, LNG import facilities, LDCs, DEsDEs, and Lead MPs regarding all matters relating to generator-resource fuel availability and environmental

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~~limitations; document the process(es) to be used in order to collect fuel availability information from Lead Market Participants in order to support the determination of energy adequacy for the region's electric power requirements;~~

~~2. To alert regional stakeholders of actual, or anticipated, near-term energy deficiency conditions such that stakeholders with resources in short supply of fuel, or with potential environmental limitations, can take action to restockplenish fuel supplies and/or take action to mitigate environmental limitations;~~

~~3. To alert regional stakeholders of potential energy deficiencies such that they may take action to shorten or reschedule maintenance or repair to transmission facilities or resources throughout the region;~~

~~2.4. To raise the awareness of New England consumers, Lead Market Participants (MPs), officials of the New England states, regional and national regulators, and regional and national reliability organizations of potential energy deficiencies that may be faced by the region;~~

~~3.5. To allow for timely implementation of load and capacity relief available within actions of OP-4 or through implementation of load shedding through OP-7, in order to address future capacity shortages deficiencies expected as a result of an Energy Emergency;~~

~~4. To facilitate strong lines of communication between the ISO, the interstate natural gas pipelines, LNG import facilities, local (gas) distribution companies (LDCs) and Designated Entities (DEs)/Lead Market Participants regarding all matters relating to generator resources fuel availability.~~

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II. **PROCESS PROCEDURE OVERVIEW**

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A. **DATA COLLECTION PROCESS DESCRIPTION NORMAL CONDITIONS**

Effective October 29, 2018, at the periodicity specified in Sections III.A, III.B, and III.C below, **ISO shall distribute** a blank survey form, OP-21A, to the Lead MP of each applicable resource. The purpose of OP-21A is to collect data that allows ISO to monitor fuel inventory levels, fuel replenishment plans, and actual or anticipated environmental limitations on resources within New England. Additionally, **ISO shall utilize** data submitted on OP-21A to perform periodic Energy Emergency forecasting and reporting, as described in Section II.B of this OP. ISO may **report** all collected data in aggregation. ~~Normal Conditions, for the purpose of this OP, exist any time that an Energy Emergency has not been declared.~~

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B. **ENERGY EMERGENCY FORECASTING AND REPORTING PROCESS DESCRIPTION AND FORECAST ALERT THRESHOLDS DATA COLLECTION AND EVALUATIONS**

Effective November 26, 2018, or earlier if possible, ISO shall perform Energy Emergency forecasting and reporting based on available data that includes the information received from Lead MPs through OP-21, ~~Appendix A submissions – Generator Fuel Inventory Survey Form.~~ Energy Emergency forecasting and reporting is performed at the periodicity specified in Sections III.A, III.B, and III.C. ISO performs Energy Emergency forecasting and reporting by using an hourly 21-day energy assessment, and comparing the results of that assessment with the Energy Emergency forecast alert thresholds (described below) in order to identify and communicate potential reliability issues to regional stakeholders. ~~will be distributed by ISO to the Lead Market Participants of applicable generators on a periodic basis during Normal Conditions. The purpose of Appendix A – Generator Fuel Inventory Survey Form is to enable ISO to keep track of the inventory of fuel reserves within the region. ISO uses Appendix A – Generator Fuel Inventory Survey Form results to assess available and maximum volumes of fuel within the region. ISO uses this information as an input to formulating an optimal generation resource commitment when fuel supplies may be constrained.~~

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The Energy Emergency forecasts are non-binding as forecasted or expected conditions utilized in the development of the forecasts can change. It is the responsibility of the Lead MPs to take all actions to ensure that resources are able to meet applicable obligations under the Tariff.

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Energy Emergency Forecast Alert Thresholds ~~ISO may increase the frequency and/or modify the survey data requirements due to emergent indications of abnormalities in fuel inventory, procurement or transportation.~~

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- o Forecast MLCC-2 (FMLCC2) – indicates that available resources during any hour of the Operating Day are forecasted to be less than 200 MW above those required to meet Operating Reserve requirements.
- o Forecast Energy Emergency Alert Level 1 (FEAA1) – indicates that available resources during any hour of the Operating Day are forecasted to be less than those required to meet Operating Reserve requirements, and that **the**

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implementation of OP-4 Actions 1 through 5 is being forecasted.

- o Forecast Energy Emergency Alert Level 2 (FEEA2) – indicates that available resources during any hour of the Operating Day are forecasted to be less than those required to meet Operating Reserve requirements and that the implementation of OP-4 Actions 6 through 11 is being forecasted.
- o Forecast Energy Emergency Alert Level 3 (FEEA3) – indicates that available resources during any hour of the Operating Day are forecasted to be insufficient to serve firm load requirements, and the implementation of firm load shedding under OP-7 is being forecasted.

ISO shall identify and report each hour of all Operating Days within the 21-day look ahead of the Energy Emergency forecast as one of the following: normal, FMLCC2, FEEA1, FEEA2, or FEEA3. Each applicable Lead Market Participant shall complete Appendix A – Generator Fuel Inventory Survey Form for each applicable generator and return it to ISO as soon as possible, but no later than the date specified by ISO. The Lead Market Participant is responsible for reporting accurate information on the Generator Fuel Inventory Survey Form. ISO may contact the Lead Market Participant to clarify any submitted information.

ISO shall publish the results of each Energy Emergency forecast on the ISO website. To the extent possible, for each instance where an Energy Emergency forecast alert threshold was met, the results shall include the reason(s) why the thresholds was met.

Energy Alert and Energy Emergency Declaration Criteria

ISO shall declare an Energy Alert, and take actions as described in Section III.B of this OP, when either of the following conditions exist:

- o FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment, or
- o Any other reason(s) for which the ISO Chief Operating Officer (COO), or designee, determines that the actions described in Section III.B of this OP may mitigate the impact of an actual or forecasted energy deficiency FEEA3 is forecasted for at least 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment.

ISO shall declare an Energy Emergency, and take actions as described in Section III.C of this OP, when either of the following conditions exist:

- o FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 1 through 5 of the 21-day energy assessment, or
- o Shedding of firm load under OP-7 is occurring or is anticipated to occur due to an actual energy deficiency resulting from a sustained shortage of fuel availability or deliverability to, or sustained environmental limitations on some or several of New England resources, or
- o Any other reason(s) for which the ISO COO, or designee, determines that

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the actions described in Section III.C of this OP may mitigate the impact of an actual or forecasted energy deficiency.

For the purposes of this OP, ISO shall declare Normal Conditions any time when neither an Energy Alert nor an Energy Emergency has been declared.

To the extent possible, ISO shall declare Energy Alerts and Energy Emergencies on a daily boundary.

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C. COMMUNICATIONS

During Normal Conditions (as described in Section III.A of this OP), ~~the~~ ISO Forecast Office staff shall communicate with interstate natural gas pipelines/LDCs as often as necessary, dependent on existing or forecasted system conditions. More frequent communications may occur when warranted by electronic bulletin board (EBB) notices or actual pipeline conditions. ~~These communications will serve to ascertain the status of the interstate natural gas pipelines affecting the New England region, and increase awareness of activities (e.g., maintenance) that may impact regional natural gas delivery.~~

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In addition to the communications that occur during Normal Conditions, during an Energy Alert or Energy Emergency (as described in Sections III.B and III.C of this OP, respectively) additional or enhanced electric/gas communications may be warranted. These communications serve to ascertain the status of the interstate natural gas pipelines affecting New England, and increase awareness of activities (e.g., maintenance) that may impact natural gas delivery to New England.

ISO shall communicate with Interstate natural gas pipelines/LDCs ~~communicate with ISO~~ in accordance with the protocols outlined in OP-21, Appendix B ~~to this OP~~ - Electric/Gas Operations Committee's (EGOC) Operations Communications Protocol (OP-21B).

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ISO Responsibilities:

- Routinely monitoring of interstate natural gas pipeline EBBs notices for indications of potential pipeline curtailments and/or restrictions. If there are indications of possible curtailments or restrictions, ~~the~~ ISO Forecasters will staff is responsible for contacting the Lead Market Participant through its DE for each applicable gas-fueled generator and ~~to seeking confirmation~~ that each applicable gas-fueled generator has sufficient ~~they~~ ~~have~~ gas scheduled to ~~their-its~~ meter(s) to support its scheduled generation commitment for the next Operating Day.
- Contacting any interstate natural gas pipeline/LDC as necessary regarding Real-Time or forecast conditions on the regional natural gas system.
- Emailing expected electric sector gas consumption hourly load profiles to the interstate natural gas pipelines.
- Reviewing natural gas nominations, via each interstate natural gas pipeline EBB, and contacting the applicable Lead Market Participant through its DE for its respective gas-fueled each generator that may indicate a deficient

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natural gas supply for the current or next Operating Day.

- Contacting each dual-fuel generator after the Day-Ahead Energy Market (DAM) is complete and to verify the type of fuel it anticipates to utilize for using on the next Operating Day.
- Publishing the results of the Energy Emergency Forecast externally on the ISO website. Indicate the forecast need for Energy Emergency actions on the seven-day load and capacity forecast posted on the ISO website, which is located at: http://www.iso-ne.com/sys_ops/op_frcstng/7day_frcst/index.html.
- Declaring and posting Energy Alerts and Energy Emergency declarations on the ISO website.

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Responsibilities for of each Lead Market Participant through its DE:

- Communicating to ISO, when such change in conditions is known, the available information regarding anticipated or actual reductions in generator availability, including but **not** limited to the ability to procure fuel and physical limitations that could reduce generator output or availability for the Operating Day.
- Communicating to ISO any knowledge of changes to Real-Time fuel deliverability, as soon as possible, to facilitate the proper commitment and dispatch of the affected generation resource(s).

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D. REPORTING REQUIREMENTS

- ISO shall submit all necessary reports in accordance with ISO New England Operating Procedure No. 10 - Emergency Incident and Disturbance Notifications (OP-10).
- Each Lead MP shall submit all necessary reports to the extent and as required by the United States (U.S.) Department of Energy (DOE) in accordance with OP-10.
- Each Lead MP, through their DE, shall notify ISO when fuel supply emergencies occur that could impact BES adequacy or reliability.
- If ISO determines that resource availability will affect the adequacy or reliability of the BES or a sub-area of the BES, ISO shall notify the U.S. DOE in accordance with Form OE-417 Electric Emergency Incident and Disturbance Report (Form OE-417) requirements.
- If limited availability affects the adequacy or reliability of the BES or sub-area of the BES, each applicable DE/MP shall notify the U.S. DOE in accordance with Form OE-417 Electric Emergency Incident and Disturbance Report requirements.
- ISO shall report to the U.S. DOE using Form OE-417 when an Energy Emergency has been declared.

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- On a case-by-case basis, ISO shall consider reporting to the U.S. DOE using Form OE-417 whenever supplies of fuel types, other than fuel oil or coal, are diminished below normal levels.

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E. DATA RETENTION REQUIREMENTS

ISO shall retain all data submitted on OP-21A for **not less than thirty-six (36) months.**

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ISO shall treat submitted data as Confidential Information in accordance with the ISO New England Inc. Transmission, Markets, and Services Tariff Attachment D - ISO New England Information Policy. In recognition of the sensitive nature of information provided in M/LCC 21, App A and the unique nature of ISO's request, ISO shall:

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— Use the information included in OP 21, App A only for the purposes of identifying and addressing prospective energy deficiencies or related concerns that may exist ("Fuel Supply Concerns");

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— Treat submitted data in accordance with the ISO New England Inc. Transmission, Markets, and Services Tariff Attachment D - ISO New England Information Policy.

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~~ENERGY EMERGENCY CONDITIONS~~

~~III. CONDITIONS~~

~~A. NORMAL CONDITIONS~~

~~For the purpose of this procedure, Normal Conditions are conditions that exist any time that neither an Energy Alert nor an Energy Emergency has been declared. is defined as a condition where the impact of a fuel shortage is projected to result in an anticipated or actual Capacity Scarcity Condition projected to last beyond the current operating day (i.e., for multiple days or longer) and that implementing the Actions under Section B of this procedure will mitigate the impact of the fuel shortage.~~

~~Data Collection Initiating Conditions~~

~~During Normal Conditions, on the following frequency basis, ISO shall distribute blank OP-21A forms to the Lead MPs of applicable resources: Any of the conditions listed below or a combination of these conditions can lead to an Energy Emergency (this is not meant to be an all-inclusive list of possible initiating conditions):~~

- ~~Weekly, in the months of December through March (i.e. winter months), and~~
- ~~Bi-weekly, in the months of April through November (i.e., non-winter months),~~

~~ISO may increase the frequency up to and including daily and/or modify the data collection requirements, as necessary, if it finds emergent indications of potential energy deficiencies due to environmental limitations, fuel inventory, procurement or transportation issues, or any other condition that could limit resource availability.~~

~~Each Lead MP shall complete the blank OP-21A form provided by ISO for each applicable resource and submit it to ISO as soon as possible, but no later than the date specified by ISO.~~

- ~~The Lead MP shall report accurate information on its completed copy of OP-21A.~~
- ~~ISO may contact the Lead MP to ask clarifying questions on any submitted information.~~
- ~~One or more pipeline operational flow orders (OFOs) have been declared~~
- ~~Significant reductions of generation resource capability due to natural gas related issues~~
- ~~Weather forecast for a extended period of cold or hot weather~~
- ~~Fuel delivery to a significant number of fossil fuel-fired generating resources is, or may be impaired~~
- ~~Prolonged drought~~

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- ~~Adverse weather conditions within the Gulf of Mexico, Western Canada, or regional shale gas basins.~~
- ~~Abnormal conditions at regional LNG import, satellite storage, or LNG trucking facilities~~
- ~~Extreme cold weather conditions in Ontario and/or Quebec~~
- ~~Extreme storm conditions off shore in the Maritimes~~
- ~~Any viable threat to one or more of the interstate natural gas pipelines or LDCs supplying New England~~
- ~~Any other serious threat to the integrity of the Bulk Electric System (BES) for which ISO determines that this OP may mitigate the impact.~~

Energy Emergency Forecasting and Reporting

During Normal Conditions, based on available data (which includes information submitted by Lead MPs on OP-21A forms), ISO shall perform Energy Emergency forecasting and reporting as follows:

- Weekly, in the months of December through March, and
- Bi-weekly, in the months of April through November

ISO shall publish results of each Energy Emergency forecast on the ISO's website.

- To the extent possible, for each instance where an Energy Emergency forecast alert threshold was met, the results shall include the reason(s) why the threshold was met.

B. ENERGY ALERT CONDITIONS

An Energy Alert is an alert that ISO shall declare when:

- FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment, or
- Any other reason(s) for which the ISO COO, or designee, determines that the actions described in Section III.B of this OP may mitigate the impact of an actual or forecasted energy deficiency. FEEA3 is forecasted to occur in any 1 hour on 1 or more consecutive days in days 6 through 21 of the 21-day energy assessment.

Data Collection

During Energy Alert conditions, on a daily basis, ISO shall distribute blank OP-21A forms to the Lead MPs of applicable resources.

ISO may increase the frequency and/or modify the data collection requirements, as necessary, if it finds emergent indications of potential energy deficiencies due to

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environmental limitations, fuel inventory, procurement or transportation issues, or any other condition that could limit resource availability.

Each Lead MP shall complete the OP-21A form provided by ISO for each applicable resource and submit it to ISO as soon as possible, but **no** later than the date specified by ISO.

- The Lead MP shall report accurate information on each submitted OP-21A form.
- ISO may contact the Lead MP to ask clarifying questions on any submitted information.

Energy Emergency Forecasting and Reporting

During Energy Alert Conditions, on a daily basis, ISO shall perform Energy Emergency forecasting and reporting based on available data which includes information submitted by Lead MPs on OP-21A forms.

ISO shall publish results of each daily Energy Emergency forecast on the ISO website.

- **To the extent possible, for** each instance where an Energy Emergency forecast alert threshold was met, the results shall include the reason(s) why the threshold was met.

Energy Alert Actions

When an Energy Alert has been declared, ISO shall:

1. Alert each LCC and surrounding Reliability Coordinator/Balancing Authority (RC/BA) of the Energy Alert.
2. Alert each Lead MP of the Energy Alert via a posting to the ISO's website.
3. Alert New England state regulators and officials of the Energy Alert.
4. Initiate daily data collection using OP-21A forms, and daily Energy Emergency forecasting and reporting.

When an Energy Alert has been declared, each Lead MP shall evaluate actual and anticipated fuel supplies and environmental limitations and should consider taking action, as necessary, to replenish fuel supplies and/or mitigate environmental limitations.

When an Energy Alert has been declared, each Lead MP and LCC shall evaluate scheduled maintenance or repair to transmission facilities or resources in the region that reduces the capability of a facility or resource to supply energy to the region and should consider taking action, if possible, to maximize availability of those facilities or resources.

C. ENERGY EMERGENCY CONDITIONS

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An Energy Emergency is an emergency that ISO shall declare when either of the following conditions exist:

- FEEA2 or FEEA3 is forecasted to occur in at least 1 hour on 1 or more consecutive days in days 1 through 5 of the 21-day energy assessment, or
- Shedding of firm load under OP-7 is occurring or is anticipated to occur due to an actual energy deficiency resulting from a sustained shortage of fuel availability or deliverability to, or sustained environmental limitations on, some or several of New England's resources, or
- Any other reason(s) for which the ISO COO, or designee, determines that the actions described in Section III.C of this OP may mitigate the impact of an actual or forecasted energy deficiency.

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Data Collection

During Energy Emergency Conditions on a daily basis, ISO shall distribute a blank OP-21A form to the Lead MPs of applicable resources.

ISO may increase the frequency and/or modify the data collection requirements, as necessary, if it finds emergent indications of potential energy deficiencies due to environmental limitations, fuel inventory, procurement or transportation issues, or any other conditions that could limit resource availability.

Each Lead MP shall complete the OP-21A form provided by ISO for each applicable resource and submit it to ISO as soon as possible, but **no** later than the date specified by ISO.

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- The Lead MP shall report accurate information on the submitted OP-21A form.
- ISO may contact the Lead MP to ask clarifying questions on any submitted information.

Energy Emergency Forecasting and Reporting

During Energy Emergency Conditions, on a daily basis, ISO shall perform Energy Emergency forecasting and reporting based on available data (which includes information submitted by the Lead MPs on OP--21A forms).

ISO shall publish results of each Energy Emergency forecast on the ISO's website.

- To the extent possible, for each instance where an Energy Emergency forecast alert threshold was met, the results shall include the reason(s) why the threshold was met.

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Energy Emergency Actions

When ~~analysis indicates that~~ an Energy Emergency ~~should be~~ has been declared, ISO ~~will~~ shall:

ISO New England Operating Procedures

OP-21 - Energy Inventory Accounting and
Actions During An Energy Emergency

1. ~~Promptly alert the each LCCs and surrounding Reliability Coordinator/Balancing Authority (RC/BA) of the Energy Emergency. MPs. (An ISO Responsibility)~~
2. Alert each Lead MP of the Energy Emergency via a posting to the ISO's website, the surrounding Reliability Coordinators (RCs) and coordinate with these Reliability Coordinator Areas (RCAs). (An ISO Responsibility).

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3. Alert New England State regulators and officials of the Energy Emergency

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4. Report the Energy Emergency to the U.S. DOE, using Form OE-417.

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5. Initiate daily data collection using OP-21A forms, and daily Energy Emergency forecasting and reporting.

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3.6. Request that each dual-fuel generator, that is scheduled to operate, voluntarily switch to operation on the fuel source that is not in short supply. (An ISO Responsibility)

4.7. Implement specific capacity and load relief measures available through actions of OP-4, excluding requesting New England State Governor's to reinforce appeals for voluntary load curtailment. (An ISO and LCC Responsibility)

If actions 1 - 4 above do not result in the necessary relief from the forecasted Energy Emergency, or if there is insufficient time for those measures to provide relief, the following actions may be taken:

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5.8. Implement a New England State Governor's appeal in accordance with OP-4: Request New England State Governors to reinforce appeals for voluntary electrical load curtailment and the declaration of a Power Warning implementation. (An ISO and LCC Responsibility)

6.9. Under extreme conditions, ISO shall seek reliability relief through load shedding actions available through implementation of OP-7. (An ISO and LCC Responsibility)

When an Energy Emergency has been declared, each Lead MP shall evaluate actual and anticipated fuel supplies and environmental limitations, and should consider taking action, as necessary, to replenish fuel supplies and/or to mitigate environmental limitations.

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When an Energy Emergency has been declared, each Lead MP and LCC shall evaluate scheduled maintenance or repair to transmission facilities or resources in the region that reduces the capability of a facility or resource to supply energy to the region and should consider taking action, if possible, to maximize availability of those facilities or resources.

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Data Collection and Evaluations

During an Energy Emergency ISO shall initiate more frequent collection of data

~~using Appendix A—Generator Fuel Inventory Survey Form.~~

~~ISO may also modify the survey data requirements due to emergent indications of abnormalities in fuel inventory, procurement or transportation.~~

~~Each applicable Lead Market Participant shall:~~

- ~~• Complete an Appendix A—Generator Fuel Inventory Survey Form for each applicable generator and return it to ISO as soon as possible, but no later than the date specified by ISO.~~
- ~~• Verify that alternate methods for fuel delivery, if any, are included within the Appendix A—Generator Fuel Inventory Survey Form at times when the normal supply methods are compromised.~~

Communications

~~In addition to the communications that occur during Normal Conditions, during an Energy Emergency the potential exists for additional or enhanced electric/gas communications. Interstate natural gas pipelines/LDCs shall communicate with ISO in accordance with the protocols outlined in Appendix B—Electric/Gas Operations Committee's (EGOC) Operations Communications Protocol.~~

~~During an Energy Emergency, each applicable Lead Market Participant through its DE shall notify ISO if fuel deliveries are compromised for any reason.~~

A.D. CANCELLATION

~~When conditions have sufficiently improved and the criteria for declaration of an Energy Alert or an Energy Emergency are no longer being met, ISO shall cancel the Energy Alert or Energy Emergency, as applicable shall be cancelled when ISO System Operations management, using the following indicators, determines that the condition(s) are clear:~~

~~To the extent possible, ISO will cancel Energy Alerts and Energy Emergencies on a daily boundary.~~

- ~~• Notification from the interstate natural gas pipelines that the pipeline(s) conditions have returned to normal~~
- ~~• Extreme cold or hot weather conditions have passed~~
- ~~• Drought conditions have abated~~
- ~~• Fuel delivery services have been restored to fossil-fueled generation resources and their fuel supply has been returned to an acceptable level~~
- ~~• Region in which the pipeline(s) emergency(ies) originated has returned to normal and infrastructure repair has been completed~~

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- ~~Return to normal conditions at regional LNG import, satellite storage, or LNG trucking facilities~~

~~D. REPORTING REQUIREMENTS~~

- ~~ISO shall file all necessary reports in accordance with ISO New England Operating Procedure No. 10—Emergency Incident and Disturbance Notifications (OP-10).~~
- ~~ISO may report all fuel data in aggregate to the public domain.~~
- ~~Each Lead Market Participant shall file all necessary reports to the extent and as required by the United States (U.S.) Department of Energy (DOE) in accordance with OP-10.~~
- ~~Each Lead Market Participant through their DE shall notify ISO when fuel supply emergencies that could impact BES adequacy or reliability occur.~~
- ~~ISO shall determine if the resource availability will affect the adequacy or reliability of the BES or sub-area of the BES.~~
- ~~If this limited availability affects the adequacy or reliability of the BES or sub-area of the BES, each applicable DE/MP shall notify the U.S. DOE in accordance with Form OE-417 Electric Emergency Incident and Disturbance Report requirements.~~

~~E. DATA RETENTION REQUIREMENTS~~

~~ISO shall retain all fuel survey data for not less than thirty-six (36) months.~~

~~Recognizing the sensitive nature of information provided in the Generator Fuel Inventory Survey Form and the unique nature of ISO's request, ISO further commits as follows:~~

- ~~ISO shall use the information included in the Generator Fuel Inventory Survey Form only for the purposes of identifying and addressing prospective potential fuel supply and delivery issues or concerns that may exist ("Fuel Supply Concerns").~~
- ~~Fuel survey data shall be treated in accordance with the ISO New England Inc. Transmission, Markets, and Services Tariff Attachment D—ISO New England Information Policy.~~

OP-21 REVISION HISTORY

Rev. No.	Date	Reason
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Revision 45, Effective Date: ~~June 1, 2018~~ draft

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ISO New England Operating Procedures

OP-21 - Energy Inventory Accounting and
 Actions During An Energy Emergency

Rev 0	11/04/05	Original Version for Winter 2005/2006
Rev 1	10/13/06	Revised OP for permanent use
Rev 2	06/01/10	Updated for the changes to OP #4 actions for FCM
Rev 3	08/28/14	Biennial review by procedure owner completed; Added referenced to support new format Globally used BES in place of BPS; Added sections on actions for Energy Inventory Accounting, Normal Conditions
Rev 3.1	06/15/16	Periodic review performed requiring no changes; Made administrative changes required to publish a Minor Revision;
Rev 4	06/01/18	Biennial review by procedure owner completed; Added required corporate document identity to all page footers; Globally, minor editorial changes and updates to make content consistent with current conditions, business process practices, and management expectations; Section I Introduction 2 nd paragraph, replaced "...Capacity Scarcity Condition..." with "...Capacity Shortage..." Section II.IV.B (Energy Emergency Conditions) 1 st paragraph, replaced "...Capacity Scarcity Condition..." with "...Capacity Shortage..."
<u>Rev 5</u>	<u>draft</u>	<u>Major re-write to include modified survey requirements and incorporation of Energy Emergency forecasting and reporting process.</u>

OP-21 Energy Inventory Accounting and Actions During an Energy Emergency

Appendix A: Generator Fuel Inventory Survey

Contact Information

2001	Your Name	enter your name for questions about this survey
2002	phone number	enter phone number
2003	email address	enter email address

Generator Information

2004	Generator Name (3 or 4 character asset name)	select unit
2005	Do you have plans to retire the ability to burn coal or oil within two months? <small><i>If this generator is not capable of burning oil or coal, please explain what changes have been made at the bottom of this survey.</i></small>	select yes or no

Oil Inventory

2006	What is the station's maximum usable storage capacity?	enter gallons
2007	What is the current usable inventory of oil on site at this moment?	enter gallons
2008	Do you have plans to order more oil within the next two months?	select yes or no
2009	If so, what is the expected date of receipt?	enter date
2010	What quantity has been ordered?	enter gallons
2011	What is the expected date of receipt?	select yes or no
2012	Has a alternate supplier been identified in case of failure of your primary delivery source?	select yes or no
2013	Assuming normal replenishment methods, what is the maximum output this generator can sustain indefinitely?	enter MW
2014	How long does it take for fuel to arrive after placing an order?	enter days
2015	If fuel replenishment is on a set schedule, how much time occurs between replenishments? Enter 9999 if not.	enter days
2016	What is the maximum volume of oil that can be delivered in a single replenishment? Enter 9999 if not.	enter gallons
2017	At what typical oil level is replenishment ordered?	enter gallons
2018	Does your resource have any operational capabilities or constraints that may impact the ability of your resource to operate?	select yes or no
2019	If you selected yes for question 2018, please provide as much detail as possible to allow the ISO to have a better understanding of these environmental constraints. Also, please describe any special circumstances where the ISO might be able to assist your resource to relieve the identified environmental constraints.	free-form entry
2020	Select all of the generator assets that share this oil inventory.	select unit
2021	Unit 1	select unit
2022	Unit 2	select unit
2023	Unit 3	select unit
2024	Unit 4	select unit
2025	Unit 5	select unit
2026	Unit 6	select unit
2027	Unit 7	select unit
2028	Unit 8	select unit

Coal Inventory

2028	What is the station's maximum storage capacity for coal?	enter tons
2029	What is the current inventory of coal on site at this moment?	enter tons
2030	Do you have plans to order more coal within the next two months?	select yes or no
2031	If so, what is the expected date of receipt?	enter date
2032	What quantity has been ordered?	enter tons
2033	Is the fuel supplier under contract for guaranteed delivery ?	select yes or no
2034	Has an alternate supplier been identified in case of failure of your primary delivery source?	select yes or no

2035	Assuming normal replenishment methods, what is the maximum output this generator can sustain indefinitely?	enter MW
2036	How long does it take for fuel to arrive after placing an order?	enter days
2037	If fuel replenishment is on a set schedule, how much time occurs between replenishments? Enter 9999 if not.	enter days
2038	What is the maximum amount of coal that can be delivered in a single shipment? Enter 9999 if no limit.	enter tons
2039	At what typical coal level is a replenishment ordered?	enter tons
2040	Does your station have any specific operational challenges or constraints that may impact the ability of your resources to respond?	select yes or no
2041	If you selected yes for question 2040, please provide as much detail as possible to allow the ISO to have a better understanding of your operational constraints. Also, please describe any specific circumstances where this ISO might be able to assist your response to mitigate the described environmental constraints.	free form entry

2042	Select all of the generator assets that share this coal inventory.	select unit
2043	Unit 1	select unit
2044	Unit 2	select unit
2045	Unit 3	select unit
2046	Unit 4	select unit
2047	Unit 5	select unit
2048	Unit 6	select unit
	Unit 7	select unit

Additional Information

2049	Have any of your fuel supply procurement processes been compromised for any reason? Reasons include but are not limited to: <ul style="list-style-type: none"> Lack of refinement capability from your supplier Unlimited trucking capability Navigational issues If so, please use this space to describe.	free form entry
2050	Do you have personnel on staff to start up and operate the generator 24 hours per day? If yes, how many?	select yes or no
2051	If not, how many hours make-up are required to meet the staffing requirements that are specified in the generator?	enter hours
2052	What are the specific conditions for the opening window, including the ability for dual fuel units to switch fuel?	select yes or no
2053	Additional Comments: Any additional information that you would like to provide to ISO New England System Operations at this time?	free form entry

Dual Fuel Units

2055	How long does it take to switch from primary to alternate fuel?	enter hours enter hours free form entry
2056	What are your manufacturer's dual fuel switching requirements? If none, write "None".	free form entry
2057	When was the last test performed?	enter date select yes or no enter why
2058	Was the test performed on the above date success?	enter why
2059	What is the operating capability of the generator while switching from primary fuel to alternate fuel? Enter 0 if the generator is not capable of switching while online.	enter why
2060	What is the maximum startup when operating on the alternate fuel?	enter why
2061	What is the annual response rate for the generator while operating on the alternate fuel?	enter why
2062	Is the generator capable of starting up without natural gas?	select yes or no enter number
2063	How many startups can this generator perform daily on the alternate fuel? Enter 9999 if unlimited.	enter number
2064	What is the weekly limit for startups on the alternate fuel? Enter 9999 if unlimited.	select yes or no free form entry
2065	Can the generator operate on both fuels simultaneously?	select yes or no free form entry
2066	Describe any maintenance or operations issues that may require additional maintenance on the unit? If yes, please provide details on the nature of the maintenance required and anticipated impacts.	free form entry

Monthly Fuel Burn

2068	How much of did this unit burn for the duration of the month not completed since completion of the last survey?	enter gallons
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Environmental/Emission Information

2069	Does the station have any environmental or emissions limitations that may impact the availability of the generators at this station? If yes, please provide details in Questions 2070-2078 below.	select yes or no
2070	For the most limiting emissions limit at this time, what is the pollutant?	select pollutant
2071	For the most limiting emissions limit at this time, what is the limit periodicity?	select periodicity
2072	For the most limiting emissions limit at this time, how much of the limit is remaining?	enter lbs
2073	For the most limiting emissions limit at this time, is there any additional information you would like to provide at this time?	free form entry
2074	For the second most limiting emissions limit at this time, what is the pollutant?	select pollutant
2075	For the second most limiting emissions limit at this time, what is the limit periodicity?	select periodicity
2076	For the second most limiting emissions limit at this time, how much of the limit is remaining?	enter lbs
2077	For the second most limiting emissions limit at this time, is there any additional information you would like to provide at this time?	free form entry
2078	Are there any additional environmental limitations at this time? (seasonal permitting, water restrictions, etc.) If yes, please provide details of the nature of the limitation and any anticipated impacts it may cause.	free form entry

OP-21 APPENDIX A REVISION HISTORY

Rev. No.	Date	Reason
Rev 0	11/4/2005	Revised OP for permanent use
Rev 1	10/13/2006	Revised document for monthly Fuel Inventory Report
Rev 2	8/28/2014	and new OP's 1. Eliminate questions regarding environmental constraints and added the monthly fuel burn section, question 2068
Rev 3	5/19/2015	Periodic review performed requiring no changes
Rev 3.1	8/12/2016	Periodic review performed requiring no changes
Rev 3.2	10/20/2016	Periodic review performed requiring no changes
Rev 4	TBD	Periodic review performed requiring no changes. Questions for which answers can be sourced from other databases



memo

To: Participants Committee
From: Marc Lyons, Secretary – Reliability Committee
Date: September 26, 2018
Subject: **ACTIONS OF THE RELIABILITY COMMITTEE**

This memo is to notify the Participants Committee (“PC”) of the actions taken by the Reliability Committee (“RC”) at its September 26, 2018 meeting.

(Agenda Item 3.1) Bay State Wind Generation and Transmission Project - Proposed Plan Applications (PPAs) ES-18-G63, ES-18-T26 through ES-18-T30 and NEP-18-T22

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England Inc. determine that implementation of the Bay State Wind Generation and Transmission Project described in Proposed Plan Applications (“PPAs”) ES-18-G63, ES-18-T26 through ES-18-T30 and NEP-18-T22 from Eversource Energy (“ES”) and New England Power Company (“NEP”), as detailed in their July 31, 2018 and July 25, 2018 transmittals to ISO New England and distributed to the committee for the September 26, 2018 meeting, will not have a significant adverse effect on the stability, reliability or operating characteristics of the transmission facilities of the applicant, the transmission facilities of another Transmission Owner or the system of a Market Participant.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 3.2) University Solar Generator Project - Proposed Plan Applications (PPAs) NEP-18-G09 through NEP-18-G12

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England Inc. determine that implementation of the University Solar Generator Project described in Proposed Plan Applications (“PPAs”) NEP-18-G09 through NEP-18-G12 from New England Power Company (“NEP”), as detailed in their August 31, 2018 transmittal to ISO New England and distributed to the committee for the September 26, 2018 meeting, will not have a significant adverse effect on the stability, reliability or operating characteristics of the transmission facilities of the applicant, the transmission facilities of another Transmission Owner or the system of a Market Participant.

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The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 3.3) Turning Point Solar Generator Project - Proposed Plan Applications (PPAs) NEP-18-G07 and NEP-18-G08

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England Inc. determine that implementation of the Turning Point Solar Generator Project described in Proposed Plan Applications (“PPAs”) NEP-18-G07 and NEP-18-G08 from New England Power Company (“NEP”), as detailed in their August 31, 2018 transmittal to ISO New England and distributed to the committee for the September 26, 2018 meeting, will not have a significant adverse effect on the stability, reliability or operating characteristics of the transmission facilities of the applicant, the transmission facilities of another Transmission Owner or the system of a Market Participant.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 3.5) Dynamic Energy Solar Project - Proposed Plan Applications (PPAs) NEP-18-G13 and NEP-18-G14

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England Inc. determine that implementation of the Dynamic Energy Solar Project described in Proposed Plan Applications (“PPAs”) NEP-18-G13 and NEP-18-G14 from New England Power Company (“NEP”), as detailed in their August 23, 2018 transmittals to ISO New England and distributed to the committee for the September 26, 2018 meeting, will not have a significant adverse effect on the stability, reliability or operating characteristics of the transmission facilities of the applicant, the transmission facilities of another Transmission Owner or the system of a Market Participant.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 3.6) Eastport Substation Breaker Addition Project - Proposed Plan Application (PPA) ES-18-T35

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England Inc. determine that implementation of the Eastport Substation Breaker Addition Project described in Proposed Plan Application (“PPA”) ES-18-T35 from Eversource Energy (“ES”), as detailed in their September 11, 2018 transmittals to ISO New England and distributed to the committee for the September 26, 2018 meeting, will not have a significant adverse effect on the stability, reliability or operating

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characteristics of the transmission facilities of the applicant, the transmission facilities of another Transmission Owner or the system of a Market Participant.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 4.1) PTF Cost Allocation - TCA Application NEP-18-TCA-03

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England approve, as consistent with the criteria set forth in Section 12C of the ISO New England Open Access Transmission Tariff for receiving regional support and inclusion in Pool-Supported PTF Rates, the Pool-Supported PTF costs of \$41.85M (2018 Estimated Costs) for work associated with the Somerset Substation Asset Condition Rebuild Project as described in TCA Application NEP-18-TCA-03, submitted August 23, 2018 by New England Power.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 4.2) PTF Cost Allocation - TCA Application ES-18-TCA-01-Rev.1

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends that ISO New England approve, as consistent with the criteria set forth in Section 12C of the ISO New England Open Access Transmission Tariff for receiving regional support and inclusion in Pool-Supported PTF Rates, the Pool-Supported PTF costs of \$10.86M (Actual Costs) for work associated with the 1231/1242 Structure Replacement Project as described in TCA Application ES-18-TCA-01-Rev.1, submitted May 21, 2018 by Eversource Energy.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 5.0) Installed Capacity Requirements and Related Values for CCP 2022/2023 (FCA 13)

HQICC Motion

It was moved and seconded to recommend Participants Committee support of the following megawatt values that represent the Hydro-Québec Interconnection Capability Credit (HQICC) values for the 13th Forward Capacity Auction for the 2022-2023 Capacity Commitment Period:

2022-2023 Capacity	HQICC Values
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Commitment Period Month	(MW)
June	969
July	969
August	969
September	969
October	969
November	969
December	969
January	969
February	969
March	969
April	969
May	969

The motion was then voted. Based on a show of hands, the motion passed.

ICR/LSR/MCL/Demand Curves Motion [Calculated without Clear River Unit 1]

It was moved and seconded to recommend Participants Committee support for the following megawatt values that represent the New England Installed Capacity Requirement (ICR), Net Installed Capacity Requirement (Net ICR), Southeast New England Local Sourcing Requirement (LSR), Northern New England Maximum Capacity Limit (MCL) and Capacity Demand Curves for the System and Capacity Zones based on the Marginal Reliability Impact (MRI) methodology for the 13th Forward Capacity Auction for the 2022-2023 Capacity Commitment Period:

	2022-2023 Capacity Commitment Period ICR Values (MW)
Installed Capacity Requirement	34,719

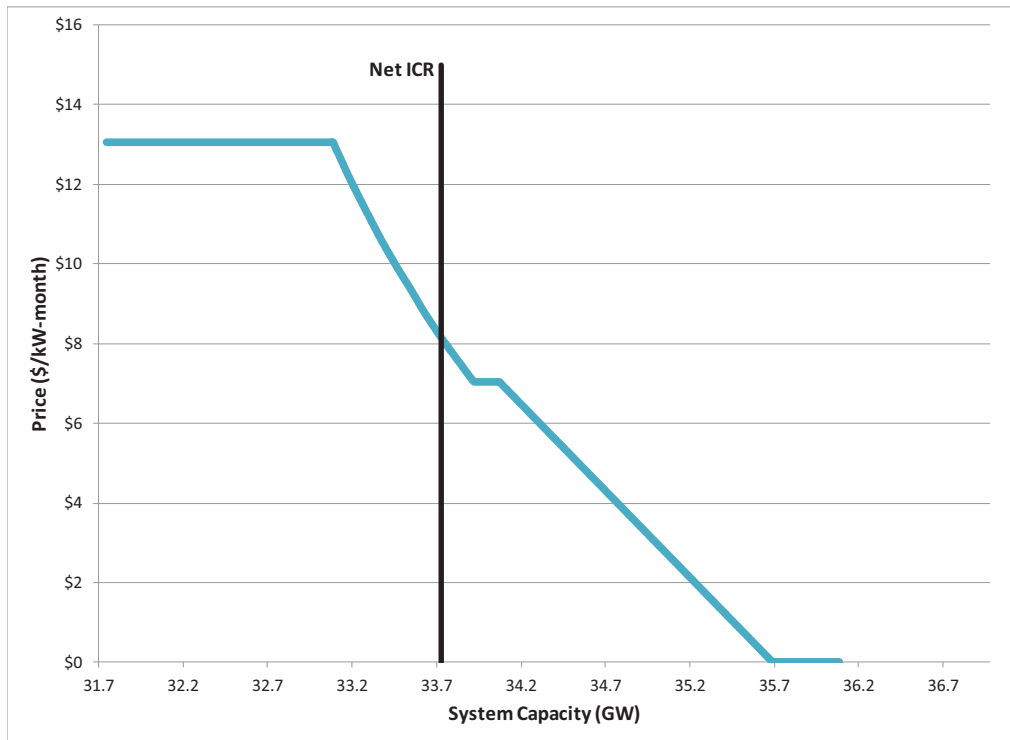
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Net Installed Capacity Requirement	33,750
Southeast New England Local Sourcing Requirement	10,141
Northern New England Maximum Capacity Limit	8,545

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2022-2023 Capacity Commitment Period System-wide Capacity Demand Curve:

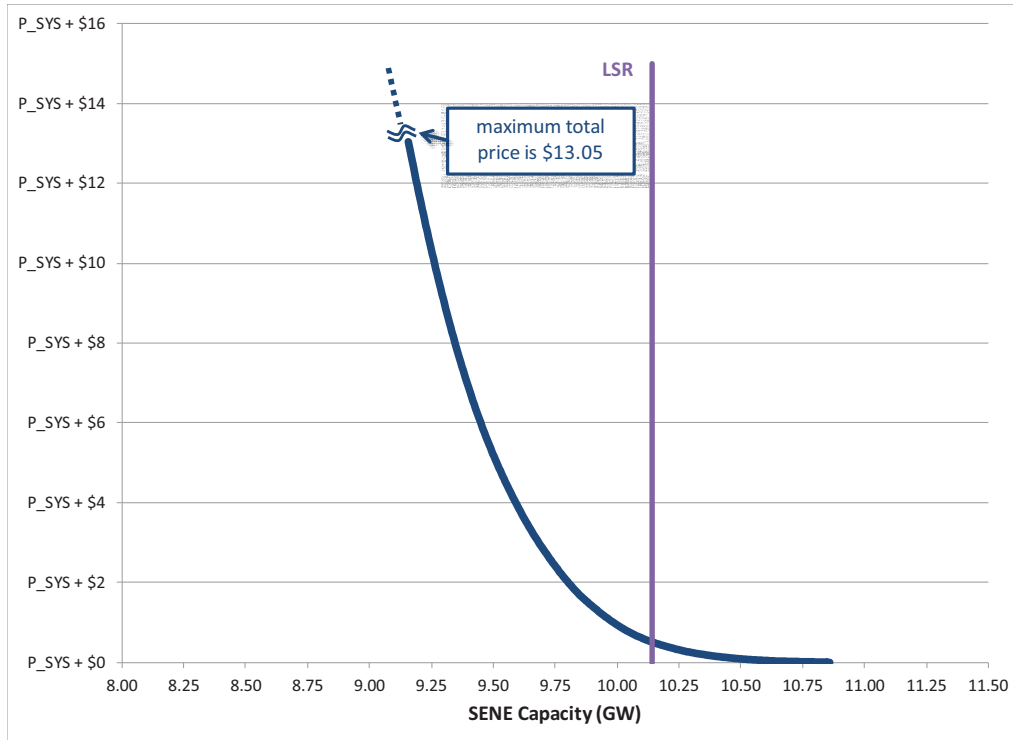
[Calculated without Clear River Unit 1]



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2022-2023 Capacity Commitment Period Southeast New England Capacity Zone Demand Curve:

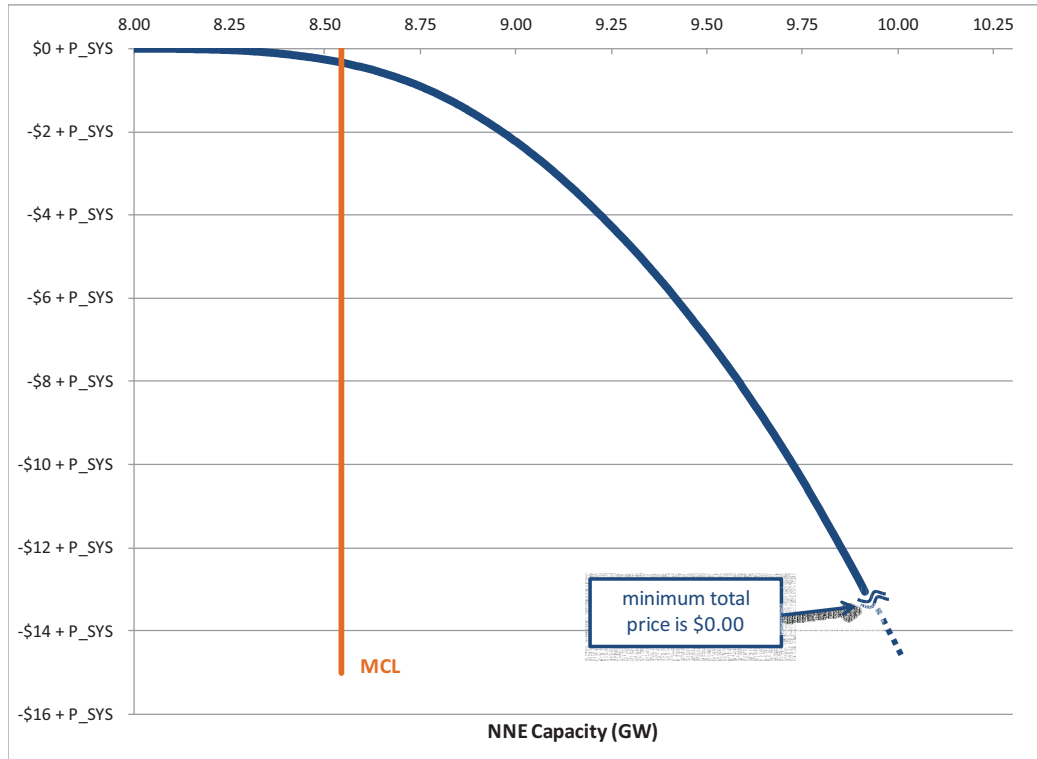
[Calculated without Clear River Unit 1]



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2022-2023 Capacity Commitment Period Northern New England Capacity Zone Demand Curve:

[Calculated without Clear River Unit 1]



The motion was voted. Based on a roll call vote, the motion passed with 65.11% in favor (Generation Sector 8.56% in favor, Transmission Sector 17.13% in favor, Supplier Sector 8.56% in favor, Publicly Owned Sector 17.13% in favor, Alternative Resource Sector 10.31% in favor, End User Sector 3.43% in favor), 34.89% opposed (Generation Sector 8.56% opposed, Transmission Sector 0.0% opposed, Supplier Sector 8.56% opposed, Publicly Owned Sector 0.0% opposed, Alternative Resource Sector 4.06% opposed, End User Sector 13.7% opposed) and 15 abstentions (3 Generation Sector, 0 Transmission Sector, 8 Supplier Sector, 0 Publicly Owned Sector, 1 Alternative Resource Sector, 3 End User Sector).

ICR/LSR/MCL/Demand Curves Motion [Calculated with Clear River Unit 1]

It was moved and seconded to recommend Participants Committee support for the following megawatt values that represent the New England Installed Capacity Requirement (ICR), Net Installed Capacity Requirement (Net ICR), Southeast New England Local Sourcing Requirement (LSR), Northern New England Maximum Capacity Limit (MCL) and Capacity Demand Curves for the System and Capacity Zones based on the Marginal Reliability Impact (MRI) methodology for the 13th Forward Capacity Auction for the 2022-2023 Capacity Commitment Period:

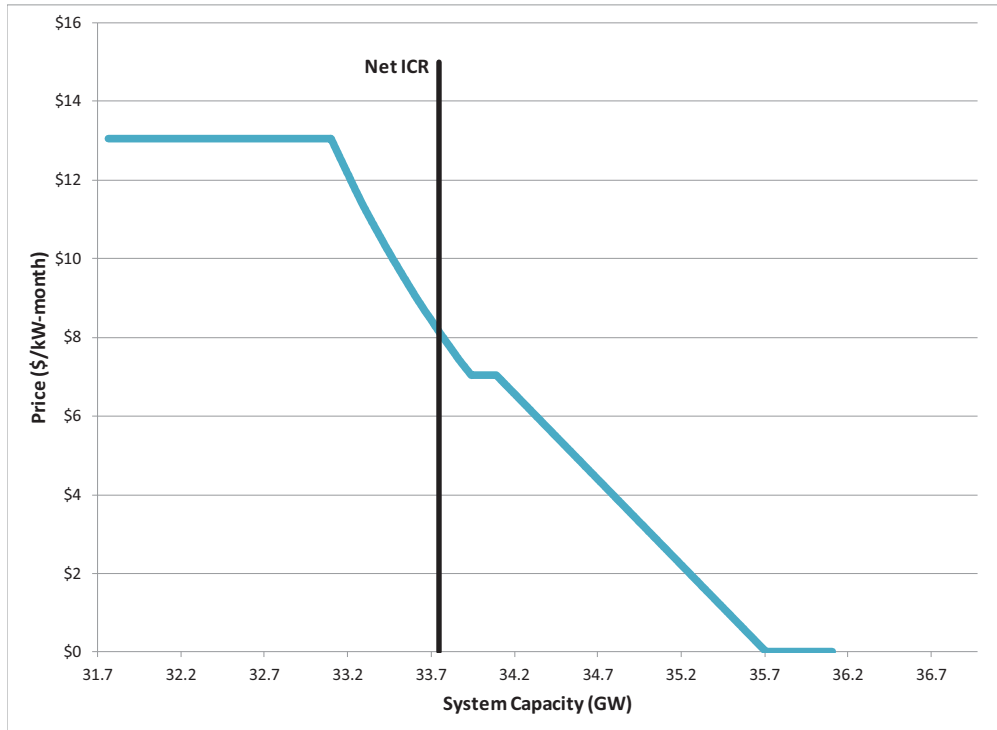
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	2022-2023 Capacity Commitment Period ICR Values (MW)
Installed Capacity Requirement	34,739
Net Installed Capacity Requirement	33,770
Southeast New England Local Sourcing Requirement	10,121
Northern New England Maximum Capacity Limit	8,555

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2022-2023 Capacity Commitment Period System-wide Capacity Demand Curve:

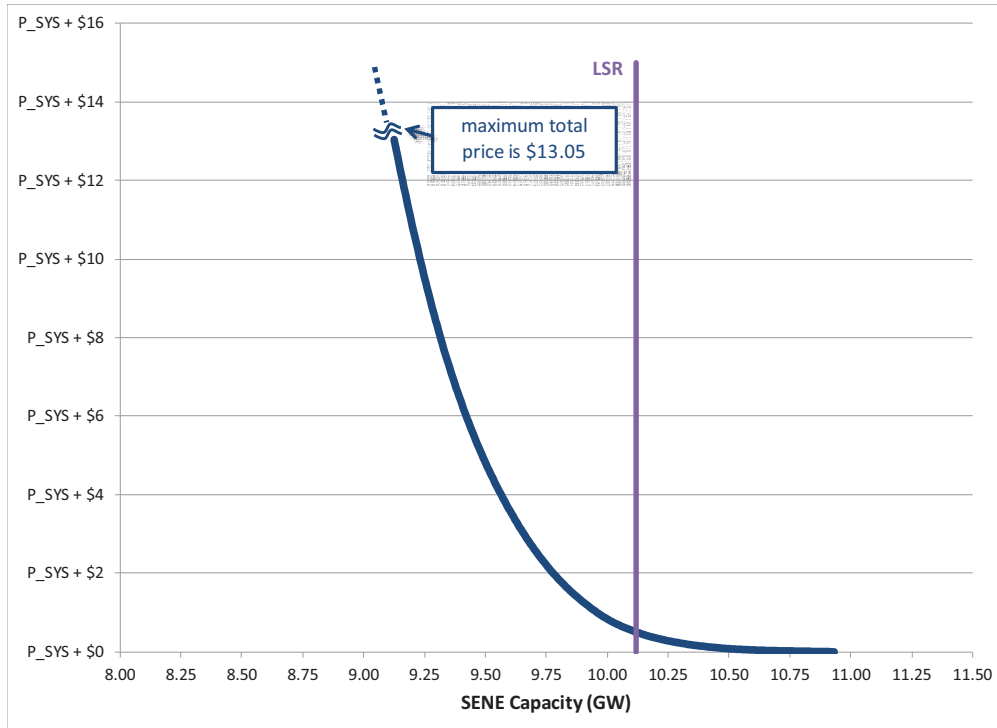
[Calculated with Clear River Unit 1]



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2022-2023 Capacity Commitment Period Southeast New England Capacity Zone Demand Curve:

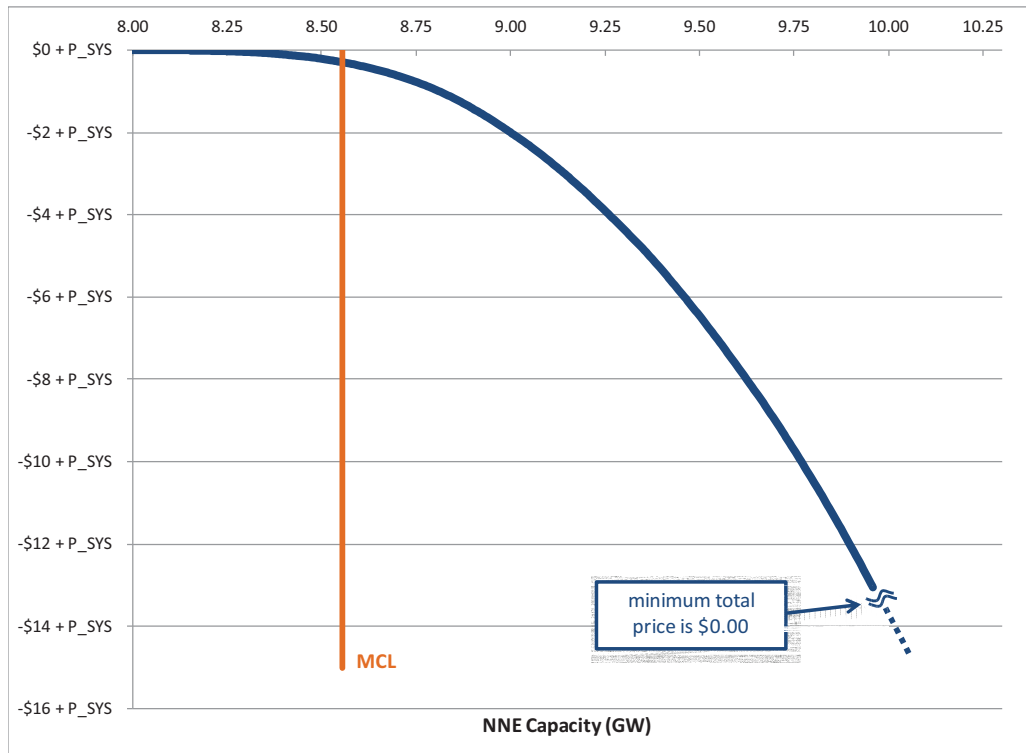
[Calculated with Clear River Unit 1]



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2022-2023 Capacity Commitment Period Northern New England Capacity Zone Demand Curve:

[Calculated with Clear River Unit 1]



The motion was voted. Based on a roll call vote, the motion failed with 50.01% in favor (Generation Sector 3.43% in favor, Transmission Sector 17.13% in favor, Supplier Sector 6.85% in favor, Publicly Owned Sector 17.13% in favor, Alternative Resource Sector 2.06% in favor, End User Sector 3.43% in favor), 49.99% opposed (Generation Sector 13.7% opposed, Transmission Sector 0.0% opposed, Supplier Sector 10.28% opposed, Publicly Owned Sector 0.0% opposed, Alternative Resource Sector 12.31% opposed, End User Sector 13.7% opposed) and 19 abstentions (4 Generation Sector, 0 Transmission Sector, 9 Supplier Sector, 0 Publicly Owned Sector, 3 Alternative Resource Sector, 3 End User Sector).

(Agenda Item 6.0) Motion on Tariff Revisions relating to changes to the Installed Capacity Requirements (ICR) assumptions

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends Participants Committee support for the revisions to Section III.12.7.3 and III.12.7.4 of the ISO New England Transmission, Markets and Services Tariff to, respectively, modify the measure of resource unavailability for peaking resources used in the calculation of Transmission Security Analysis Requirements, and modify the assumed amount of load relief from 5% voltage reduction used in the calculation of the Installed Capacity Requirement and related values, together with such other changes as discussed

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and agreed to at the meeting, and such other non-material changes as may be approved by the Chair and Vice-Chair of the Reliability Committee following the meeting

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 8.1) - ISO New England Operating Procedure 14

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends Participants Committee support for revision of ISO New England Operating Procedure No. 14 – Technical Requirements for Generators, Demand Response Resources, Asset Related Demand, and Alternative Technology Regulation Resources and distributed to the committee for the September 26, 2018 meeting, together with such other changes as discussed and agreed to at the meeting, and such other non-material changes as may be approved by the Chair and Vice-Chair of the Reliability Committee following the meeting.

The motion was then voted. Based on a show of hands, the motion passed with none opposed and no abstentions.

(Agenda Item 8.1) - ISO New England Operating Procedures 21 and 21A

The following motion was moved and seconded by the Reliability Committee:

Resolved, the Reliability Committee recommends Participants Committee support for revision of ISO New England Operating Procedures No. 21 – Energy Inventory Accounting and Actions During an Energy Emergency and ISO New England Operating Procedures No. 21A - Generator Fuel Inventory Survey, distributed to the committee for the September 26, 2018 meeting, together with such other changes as discussed and agreed to at the meeting, and such other non-material changes as may be approved by the Chair and Vice-Chair of the Reliability Committee following the meeting.

The motion was then voted. Based on a show of hands, the motion passed with two opposed (2 Publicly Owned Sector) and one abstention (1 Supplier Sector).