

ISO New England Operating Procedure No. 4 - Action During A Capacity Deficiency

Effective Date: June 1, 2018

REFERENCES:

NERC Reliability Standard EOP-011 - Emergency Operations
NERC Reliability Standard COM-002 - Operating Personnel Communications
Protocols
NPCC Directory #2 Emergency Operations
NPCC Directory #5 Reserve
ISO New England Inc. Transmission, Markets and Services Tariff Section III, ISO
New England Market Rule 1 - Standard Market Design (Market Rule 1)
ISO New England Operating Procedure No. 7 - Action in an Emergency (OP-7)
ISO New England Operating Procedure No. 8- Operating Reserve and Regulation
(OP-8)
ISO New England Operating Procedure No. 9 - Scheduling and Dispatch of External
Transactions (OP-9)
ISO New England Operating Procedure No. 14 - Technical Requirements for
Generators, Demand Response Resources, Asset Related Demands and
Alternative Technology Regulation Resources (OP-14)
Master/Local Control Center Procedure No. 2 - Abnormal Conditions Alert
(M/LCC 2)
Master/Local Control Center Procedure No.13 - ISO and LCC Communication
Practices (M/LCC 13)
CROP.10002 Implement Capacity Remedial Actions

*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.*

Table of Contents

PART I - INTRODUCTION..... 3

PART II - PROCEDURE..... 4

 I. IMPLEMENTATION BY ISO NEW ENGLAND..... 4

 II. CANCELLATION OF ACTIONS..... 7

 III. IMPLEMENTATION BY LCCS..... 7

 IV. COMMUNICATIONS..... 7

 V. IMPLEMENTATION OF AN ALERT..... 7

 VI. PUBLIC NOTIFICATIONS 8

OP-4 REVISION HISTORY..... 9

Appendices:

Appendix A - Estimates Of Additional Generation And Load Relief From System Wide Implementation Of Actions In ISO New England Operating Procedure No. 4 - Action During A Capacity Deficiency Based On A 26,458 MW System Load

PART I - INTRODUCTION

This Operating Procedure (OP) establishes criteria and guidelines for actions during capacity deficiencies, as directed by ISO New England (ISO) and as implemented by ISO and the Local Control Centers (LCCs). This OP may be implemented any time one or more of the following events, or other similar events, occur or are expected to occur:

- The resources available to the New England Reliability Coordinator Area/ Balancing Authority Area (RCA/BAA) outside of OP-4 are insufficient to meet the anticipated load plus Operating Reserve requirements. This OP will **not** be implemented to maintain Replacement Reserve requirements.
- One or more contingencies have occurred resulting in an immediate deficiency in the New England RCA/BAA available capacity resources required to meet the load plus Operating Reserve requirements.
- Transmission facilities into a sub-area of the New England RCA/BAA are loaded beyond established transfer capabilities.
- A sub-area of the New England RCA/BAA is experiencing abnormal voltage and/or reactive conditions.
- The need to implement manual load shedding as required by ISO New England Operating Procedure No. 7 - Action in an Emergency (OP-7) is imminent but load shedding may be avoided, or reduced in magnitude, by implementation of this OP.
- Another Northeast Power Coordinating Council Inc. (NPCC) RCA/BAA, or a remote system or pool, is experiencing a capacity deficiency and has requested assistance from ISO, which, if provided, would reduce the New England RCA/BAA actual Operating Reserve below the required levels.
- Any other serious threat to the integrity of the Bulk Electric System (BES) for which ISO determines that this OP would mitigate the impact.

Appendix A - Estimates Of Additional Generation And Load Relief From System Wide Implementation Of Actions In ISO New England Operating Procedure No. 4 - Action During A Capacity Deficiency Based On A 26,458 MW System Load contains an estimate of the additional generation and load relief, which will be achieved through implementation of the Actions specified in this OP.

PART II - PROCEDURE

I. IMPLEMENTATION BY ISO NEW ENGLAND

ISO shall alert each LCC and Market Participant promptly any time one or more of the events described in Part I of this OP are anticipated, or have actually occurred, and implementation of this procedure may be required. ISO shall also alert each surrounding Reliability Coordinator/Balancing Authority (RC/BA) and coordinate with these RCs/BAs in accordance with NPCC Directory #5 Reserve. The alert shall be issued in accordance with Master/Local Control Center Procedure No. 2 - Abnormal Conditions Alert (M/LCC 2). Upon implementation of OP-4, ISO shall notify each LCC of the OP-4 Actions required by number. ISO and each LCC shall initiate Actions according to the authority and responsibility assigned in this OP. To the extent possible, ISO will continue to dispatch resources in accordance with Section III of the ISO New England Inc. Transmission, Markets and Services Tariff (Tariff), while ensuring reliability in the New England RCA/BAA during implementation of OP-4.

Various Actions of OP-4 shall be implemented to the extent required to manage Operating Reserve Requirements, in accordance with ISO New England Operating Procedure No. 8 - Operating Reserve and Regulation (OP-8) and/or to provide necessary dispatch options during abnormal conditions.

ACTION 1 (An ISO responsibility)

ISO shall notify all resources that a capacity deficiency exists. Each Resource with a Capacity Supply Obligation shall prepare to provide all associated operable capability.

ISO shall notify via the "Notices" section of the ISO website that each "Settlement Only" Resource with real-time obligations and a Capacity Supply Obligation should be monitoring the status of the reserve pricing and is required to meet its obligation under the "Capacity Scarcity Condition" definitions in Section III of the Tariff.

Begin to allow the depletion of Thirty-Minute Operating Reserve.

Implement a Power Caution.

ACTION 2 (An ISO responsibility)

Declare Energy Emergency Alert (EEA) Level 1.¹

ACTION 3 (ISO responsible for Designated Entities and Demand Designated Entities, LCCs for office complexes.)

Request voluntary load curtailment of Market Participants' facilities in the New England RCA/BAA.

¹ EEA Levels are described in Attachment 1 to NERC Reliability Standard EOP-011 - Emergency Operations.

ACTION 4 (An ISO responsibility)

Implement a Power Watch.

ISO will normally implement Action 5 and beyond of this OP to maintain Ten-Minute Reserve.

ACTION 5 (An ISO responsibility)

Arrange to purchase available emergency capacity and energy, or energy only, (if capacity backing is **not** available) from Market Participants or neighboring RCAs/BAAs. Control Area-to-Control Area emergency transactions will normally be used as a last resort, when market-based emergency energy transactions are **not** available, or **not** available in a timely fashion.

Action 6 shall be implemented to the extent required to maintain Ten-Minute Reserve, in accordance with OP-8, and to enable ISO to better cope with possible continuing and deteriorating abnormal operating conditions.

ACTION 6 (ISO responsible for sharing reserves, LCCs responsible for voltage reduction)

Implement a voltage reduction of five percent (5%) of normal operating voltage requiring more than 10 minutes to implement.

Declare Energy Emergency Alert (EEA) Level 2.

Alert the New York Independent System Operator (NYISO) that sharing of reserves within NPCC may be required.

In addition, ISO shall begin to count the manual load shedding capability available as part of OP-7 to meet its Disturbance Control Standard requirements.

ACTION 7 (ISO responsibility)**NOTE**

The following request will be made on a forecast basis when ISO anticipates it will be unable to maintain Ten-Minute Reserve or in Real-Time based on the current operating conditions

Request Generators and Demand Response Resources **not** subject to a Capacity Supply Obligation (CSO) voluntarily provide energy for reliability purposes.

Action 8 shall be implemented to maintain adequate Ten-Minute Reserve in the New England RCA/BAA. The amount to be maintained will be determined based on actual system conditions at the time of the deficiency or the need to aid another NPCC RCA/BAA in accordance with NPCC Directory #5 Reserve.

ACTION 8 (An ISO and LCC responsibility)

Implement a voltage reduction of five percent (5%) of normal operating voltage

Hard Copy Is Uncontrolled

that is attainable within 10 minutes.

Declare EEA Level 2, if **not** already performed in an earlier action.

Actions 9, 10 and 11 will normally be implemented by ISO through the LCCs based upon advance projections made by ISO that it will **not** be possible to maintain adequate Ten-Minute Reserve by implementing Actions 1 through 8. When Actions 9 and 10 are requested, the particular hours that they are to be implemented will be specified by ISO. Actions 9, 10, and 11 should be implemented as early as possible to achieve maximum benefit.

ACTION 9 (LCC responsibility)

Request all of the customer generation **not** contractually available to Market Participants. Request voluntary load curtailment by large industrial and commercial customers.

ACTION 10 (An ISO and LCC responsibility)

Initiate radio and television appeals for voluntary load curtailment.

Implement a Power Warning.

Declare EEA Level 2, if **not** already performed in an earlier action.

Depending on the circumstances and the time required to institute certain of the above Actions, it may be necessary to call for some Actions simultaneously, or to alter the order of Action initiations. When all of the above Actions have been taken, further action, if required, is covered under OP-7

It may be necessary to implement OP-7, prior to the implementation of all of the above Actions. If, at any time during implementation of the above Actions, it appears that implementation of OP-7 will be required; ISO shall notify each LCC.

When Action 11 is requested, the particular hours this Action is to be implemented will be specified by the ISO.

ACTION 11 (An ISO responsibility)

Request each New England state Governor reinforce Power Warning appeals, as initiated in Action 10.

Declare EEA Level 2, if **not** already performed in an earlier action.

II. CANCELLATION OF ACTIONS

When the system conditions have sufficiently improved, ISO shall cancel the Actions instituted in this OP Section I. Depending on system conditions, the order of Action cancellation may be different than the order of Action initiation.

III. IMPLEMENTATION BY LCCS

Any of the Actions provided in this OP may be implemented by an LCC to deal with local conditions within that LCC. The severity of the condition will determine the Actions taken. ISO shall review LCC implementation of this OP to ensure the implementation is consistent with Section III of the Tariff and ISO Manuals.

IV. COMMUNICATIONS

ISO shall inform all LCCs simultaneously of system conditions and issue an implementation operating instruction. Each LCC, in alphabetical order, shall repeat back the operating instruction to provide acknowledgment. When each LCC completes implementation of an Action, the LCC shall report implementation of the Action has been completed and the time of that Action was completed to ISO. These communications will be performed per the communications protocol required by NERC Reliability Standard COM-002 and as stated in M/LCC No.13 - ISO and LCC Communication Practices.

Each LCC shall be responsible for keeping its member companies and ISO informed of all situations pertaining to implementation and cancellation of this procedure. ISO shall make notifications to the Department of Energy as required. Each LCC shall make notifications to state regulatory agencies as required. ISO shall issue a report to the appropriate Technical Committee(s) following implementation of this OP within 3 Business Days of the implementation.

V. IMPLEMENTATION OF AN ALERT

ISO Control Room staff shall notify, as appropriate, each LCC, DE, and DDE as soon as OP-4 conditions are anticipated or underway by executing its responsibilities as declared by M/LCC 2.

VI. PUBLIC NOTIFICATIONS

Notifications associated with forecast or actual implementation of OP-4 shall be conducted in accordance with CROP.10002 Implement Capacity Remedial Actions. Power Advisories shall be issued by ISO via its external website. These Power Advisories shall be triggered by the implementation of certain Actions of OP-4 as described below. These notifications are considered public information.

Power Caution

A Power Caution is triggered by the initial implementation of OP-4 Action 1. A Power Caution is defined as a notification that electric reserves can **no** longer be maintained using normal measures. Although full reserves are **not** being maintained, utility personnel will begin to take steps to manage these reserves.

Power Watch

A Power Watch is triggered by the implementation of OP-4 Action 4. A Power Watch is defined as a notification that further steps to manage capacity could affect the public.

Power Warning

A Power Warning is triggered by the implementation of OP-4 Action 10. A Power Warning is defined as a notification for public appeals when an immediate reduction in power usage is necessary to avert overload of the electrical system. Public appeals are made when other efforts (e.g., emergency purchases, voluntary curtailment, contracted curtailment and voltage reduction) have been unsuccessful in bringing supply and demand back into balance.

OP-4 REVISION HISTORY

Document History (This Document History documents action taken on the equivalent NEPOOL Procedure prior to the RTO Operations Date as well revisions made to the ISO New England Procedure subsequent to the RTO Operations Date.)

Rev. No.	Date	Reason
--	05/11/17	For previous revision history, refer to Rev 10 available through Ask ISO;
Rev 11	12/09/11	References Section replaced references to NPCC A-06 with NPCC Directory #5 Reserve, deleted reference to NPCC C-20; added MLCC 13 and SOP.RTMKTS.0125.0020; Part II Procedures, Section I Implementation By ISO New England replaced NPCC A-06 with NPCC Directory #5 Reserve and deleted reference to NPCC C-20; Minor editorial, grammar, etc changes; Deleted 2 nd paragraph of footer disclaimer ; Deleted communication examples Annual review by procedure owner
Rev 12	10/05/13	Annual review by procedure owner; Editorial changes (format) consistent with current practices and management expectations; In References Section, deleted OP-10 and added SOP-RTMKTS.0120.0020;
Rev 13	08/12/14	Annual review by procedure owner; References Section, updated OP-14 title (added ATRRs)
Rev 14	06/24/15	Annual review by procedure owner; References Section, deleted ISO New England Manuals and updated Market Rule 1 title
Rev 15	06/08/16	Annual review by procedure owner; Globally, replaced "SOP-RTMKTS.0120.0020" with "CROP.10002" and replaced "26,939 MW" with "26,704 MW"; Where applicable, corrected reference document titles; Section IV, replaced "party line telephone circuit" with "All LCC conference calling feature"
Rev 15.1	05/11/17	Periodic review performed requiring no changes; Made administrative changes required to publish a Minor Revision (added required corporate document identity to all page footers and truncated the Revision History per SOP-RTMKTS.0210.0010 Section 5.6 ;
Rev 16	07/05/17	Annual review by procedure owner; Updated references; Updated load from "26,704 MW" to "26,482";
Rev 17	06/01/18	Annual review completed by procedure owner; References Section, replaced NERC "EOP-002" with "EOP-011", updated OP-14 title added M/LCC 2, updated M/LCC 13 title, deleted LCC Instructions: Appendices Section and Part I last paragraph, replaced "26,482 MW" with "26,458 MW" in Appendix A title; Globally made minor editorial changes to be consistent with current conditions, practices and management expectations; Part II Action 1, Added "...Response...", replaced "Shortage Event" with "Capacity Scarcity Condition" per Market Rule 1 and the Tariff" Part II Action 2, replaced "generation and demand designated entities" with "Designated Entities and Demand Designated Entities"; Deleted Demand Response and Emergency Generation; Added EEA Level 1 to Action 2 and footnote for attribution; Part II Action 6 Deleted "...Demand Resources and...", added "Declare Energy Emergency Alert (EEA) Level 2 and deleted "Dispatch Real-Time Emergency Generation Resources in the amount and location required", added new last paragraph ; Part II Action 7 1 st paragraph, added "...and Demand Response Resources..." 2 nd paragraph replaced "shortage" with "scarcity"; Part ii Action 8, Action 10 and Action 11: added "Declare EEA Level 2, if not already performed in an earlier action." ; Part V replaced "...generation station (or designee) and Dispatchable Asset Related Demand.." with "...DE, and DDE as..."