

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

Effective Date: draft

REFERENCES:

NERC Reliability Standard EOP-002 - Capacity and Energy Emergencies
NERC Reliability Standard COM-002 - Communications and Coordination
NPCC Directory #2 Emergency Operations
NPCC Directory #5 Reserve
ISO New England - ISO New England Inc. Transmission, Markets and Services
Tariff Section III, ISO New England Market Rule 1 - Standard Market Design (Market Rule 1)
ISO New England 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 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 - Communication between the ISO and Local Control Centers
SOP-RTMKTS.0125.0020 - Communicate with Internal and External Parties
CROP.10002 Implement Capacity Remedial Actions

Local Control Center Instructions:

CONVEX:	Operating Instruction 0004 - Action During A Capacity Deficiency
Maine:	Maine Operating Procedure 4 - Actions In A Capacity Deficiency
New Hampshire:	OP 0004 - Capacity Deficiency Actions
NSTAR	Operating Procedure 4 Action During a Capacity Deficiency
REMVEC II	Operating Procedure 4, Action During A Capacity Deficiency
VELCO:	VELCO Operating Procedure OP-4- Action During A Capacity Deficiency

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PART I - INTRODUCTION

This procedure establishes criteria and guides for actions during capacity deficiencies, as directed by ISO New England (ISO) and as implemented by ISO and the Local Control Centers (LCCs). This procedure 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. It will **not** be utilized 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 application of this procedure.
- Another Northeast Power Coordinating Council (NPCC) RCA/BAA, or a remote system or pool, is experiencing a capacity deficiency and has requested assistance from ISO, which, if provided, will 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 procedure will 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 27,071 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 procedure.

PART II - PROCEDURE

I. IMPLEMENTATION BY ISO NEW ENGLAND

ISO will alert each LCC and Market Participant promptly any time one or more of the events described in Part I are anticipated, or have actually been experienced, and application of this procedure may be required. ISO will 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 will be issued in accordance with Master/Local Control Center Procedure No. 2 - Abnormal Conditions Alert (M/LCC 2). Upon implementation of OP-4, ISO will notify each LCC of the Actions required by number. ISO and each LCC will initiate Actions according to the authority and responsibility assigned by this procedure. To the extent possible, ISO will continue to dispatch resources in accordance with ISO New England - ISO New England Inc. Transmission, Markets and Services Tariff Section III, ISO New England Market Rule 1 - Standard Market Design (Market Rule 1), while ensuring reliability in the New England RCA/BAA during implementation of OP-4.

Action 1 and 2 will 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 will inform all resources that a capacity shortage exists. Each Generator and Demand Resource with a Capacity Supply Obligation will prepare to provide all associated Operable Capability.

ISO will notify via the "Notices" section of the ISO New England website that each "Settlement Only" Generator with real-time obligations and capacity supply obligation should be monitoring the status of the reserve pricing and are required to meet their obligation under the "Shortage Event" definitions in Market Rule 1.

Begin to allow the depletion of 30-minute reserve.

Implement a Power Caution.

ACTION 2 (An ISO responsibility)

Dispatch Real Time Demand Resources in the amount and location required.

ACTION 3 (ISO responsible for generation and demand designated entities, LCCs for office complexes.)

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

ACTION 4 (An ISO responsibility)

Implement a Power Watch.

ISO will normally implement Action 5 and beyond of this procedure 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/BAs. Control Area to Control Area 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 may be implemented to the extent required to maintain 10-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 Demand Resources and sharing reserves, LCCs for voltage reduction)

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

Dispatch Real-Time Emergency Generation Resources in the amount and location required.

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

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 Reserves or in real-time based on the current operating day conditions

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

Action 8 will be implemented to maintain adequate 10-minute synchronized reserve in the New England RCA/BAA. The amount of 10-minute synchronized reserve to be maintained will be determined based on actual system conditions at the time of the shortage or the need to aid another NPCC RCA/BAA under the NPCC Operating Reserve Policy.

ACTION 8 (An ISO and LCC responsibility)

Implement a voltage reduction of five percent (5%) of normal operating voltage that is attainable within 10 minutes.

Actions 9, 10 and 11 will normally be implemented by ISO through the LCCs based upon advance projections made by ISO that it will be necessary to implement Actions 1 through 8, and that it will **not** be possible to maintain adequate 10-minute synchronized reserve. 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.

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 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.

II. CANCELLATION OF ACTIONS

When the system conditions have improved sufficiently, ISO will cancel the Actions instituted in Section I above. Depending on system conditions, the order of cancellation may be different from the order of initiation.

III. IMPLEMENTATION BY LCCS

Any of the Actions provided in this procedure 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 will review LCC implementation of this procedure to ensure the implementation is consistent with Market Rule 1 and ISO Manuals.

IV. COMMUNICATIONS

ISO Control Room Staff will use the "party line" telephone circuit to implement this procedure. ISO will briefly inform all LCCs simultaneously of system conditions and issue an implementation directive as illustrated below. Each LCC, in alphabetical order, will repeat back the directed action to provide acknowledgment. When each LCC completes a directed action, the LCC will report the directed action has been completed and the implementation time of that action 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 Communication between the ISO and Local Control Centers and SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties.

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 will make notifications to the Department of Energy as required. Each LCC will make notifications to state regulatory agencies as required. ISO will issue a report to the appropriate Technical Committee(s) following implementation of this procedure within 3 business days of the implementation.

V. IMPLEMENTATION OF AN ALERT

ISO Control Room staff will notify, as appropriate, each LCC, generation station (or designee) and Dispatchable Asset Related Demand 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 will be conducted in accordance with CROP.10002 Implement Capacity Remedial Actions. Power Advisories will be issued by ISO via its external website. These Power Advisories will 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
Rev 0	8/21/98	
Rev 1	8/26/99	
Rev 2	11/1/02	
Rev 3	06/26/03	
Rev 4	02/01/05	Updated to conform to RTO terminology
Rev 5	05/06/05	Update for initiation of VELCO Local Control Center and NERC Version 0 Standards
Rev 6	08/05/05	Clarified that EEA notifications are done by the ISO not the LCC
Rev 7	10/01/06	Updated for ASM 2
Rev 8	03/05/08	Update for NSTAR becoming an LCC; global change of Control Area to Control Area /Balancing Authority and defined acronym of CA/BA; global change for Local Control Center to defined acronym of LCC; revised reference documents; corrected document titles; re-worded comment prior to ACTION 11; added language addressing communication standards and procedures; added requirement for LCCs to confirm completion of Actions; Annual procedure review by Procedure Owner
Rev 9	06/01/10	Revised to reflect the elimination of the current DR programs and the implementation of the new programs. In addition, we have included the request for delisted capacity as part of OP #4 in an effort to maintain 10 minute reserves.
Rev 10	12/10/10	Annual review by procedure owner; Global made minor format changes, changed font to Arial, minor grammatical, punctuation, editorial changes, and made use of defined acronyms; Global added Reliability to NERC Standards titles in References section ; Replaced NPCC Criteria 03 Emergency Action Operation with NPCC Directory #2 Emergency Operations & corrected OP-10 title in References section; Corrected LCC Instruction section information; Global replaced Control Area/Balancing Authority CA/BA with Reliability Coordinator Area/Balancing Authority Area RCA/BAA); Added uncontrolled disclaimer to 1 st page footer and "Uncontrolled" to all page footers; Modified Part II, Section I, Action 1 to be consistent with the last Revision made to OP-4 for FCM Section IV.1 st paragraph: replace "...message..." with "...directive..."
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. No.	Date	Reason
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	draft	Annual review by procedure owner; Globally, replaced "SOP-RTMKTS.0120.0020 with CROP.10002" and replaced "26,939 MW with 27.071 MW"; Where applicable, corrected reference document titles;