

APPENDIX A - INSTRUCTIONS FOR IMPLEMENTATION OF MANUAL LOAD SHEDDING

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NOTE

The following directives are to be observed by the ISO New England (ISO) Control Room Staff during the manual shedding of load and manual restoration of previously shed load.

I. WHEN SHEDDING LOAD NEW ENGLAND WIDE:**A. COMMUNICATION WITH LOCAL CONTROL CENTERS (LCCs)**

All LCCs will be on the party line prior to the time the ISO Control Room Staff issues instructions.

B. QUANTITY OF LOAD

The ISO Control Room Staff will direct the quantity of load to be shed or restored by specifying a step number.

$$\text{Step Number} = \frac{\text{Total MW Load to be Shed or Restored} \times 100}{\text{Instantaneous New England Load}}$$

C. IMPLEMENTATION MESSAGES

The ISO Control Room Staff will issue a concise verbal directed action and await LCC repeat back, which should be received from each LCC alphabetically. ISO shall acknowledge each LCC repeat back of directives as correct or reissue the directive.

Typical messages are as follows:

Directed Actions by ISO:

1. ISO to ALL: "Implement OP 7, manually shed load from step __ through step _"
- or
2. ISO to ALL: "Implement OP 7, manually restore load from step __ through step _"

Acknowledgments by each LCC:

1. Each LCC to ISO: "OP 7, manually shed load from step __ through step __"
- or
2. Each LCC to ISO: "OP 7, manually restore load from step __ through step __"

Acknowledgment by ISO:

1. ISO to Each LCC: "That is correct."
(If misunderstandings occur, reissue the directive)

D. EXAMPLES:

Typical Load Shedding Implementation Directed Action and Acknowledgment Messages

Assumed Conditions:

New England Load - 21,400 MW

NEED: Shed 500 MW uniformly throughout New England.
50,000 / 21,400 = 2.3

Messages:Directed Action by ISO:

1. ISO to ALL LCCs: “Implement OP 7, manually shed load from step 1 through step 3.”

Acknowledgment by LCCs:

1. CONVEX to All: “OP 7, manually shed load from step 1 through step 3.”
2. MAINE to All: “OP 7, manually shed load from step 1 through step 3.”
3. New Hampshire to All: “OP 7, manually shed load from step 1 through step 3.”
4. NSTAR to All: “OP 7, manually shed load from step 1 through step 3.”
5. REMVEC II to All: “OP 7, manually shed load from step 1 through step 3.”
6. VELCO to ALL: “OP 7, manually shed load from step 1 through step 3.”

Acknowledgment by ISO:

1. ISO to each LCC: “That is correct.”
(If misunderstandings occur, reissue the directive)

Typical Restoration of Previously Shed Load Implementation Directed Action and Acknowledgment Messages

Assumed Conditions:

New England Load = 20,900 MW

NEED: Restore 500 MW of load that had been previously shed uniformly throughout New England.

Calculation results: $50,000 / 20,900 = 2.4$

Messages:

Directed Action by ISO:

1. ISO to ALL: “Implement OP 7, manually restore load from step 3 through step 1.”

Acknowledgment by each LCC:

1. CONVEX to All: “OP 7, manually restore load from step 3 through step 1.”
(Other LCCs respond in alphabetical order)

Acknowledgment by ISO:

1. ISO to ALL: “That is correct.”
(If misunderstandings occur, reissue the directive)

II. WHEN SHEDDING LOAD IN INDIVIDUAL LCC AREA(S)

A. COMMUNICATION WITH LCC(S)

NOTE:

An affected LCC is an LCC that is within the area in which load shedding will be effective in alleviating a problem.

Each affected LCC will be contacted individually and a concise verbal directed action will be issued by the ISO Control Room Staff. When each affected LCC has been contacted, the unaffected LCCs will be contacted individually and informed of the situation.

B. QUANTITY OF LOAD TO BE SHED OR RESTORED

The ISO Control Room Staff will direct the quantity of load to be shed or restored by specifying a (MW) amount. The affected LCC Operator will be responsible for converting the MW amount into a step number if required.

C. AFFECTED LCC IMPLEMENTATION MESSAGES

The ISO Control Room Staff will issue a concise verbal directed action to each affected LCC and await accurate acknowledgment or reissue the directive. Typical messages are as follows:

Directed Action by ISO:

1. ISO to Affected LCC: "Implement OP 7, manually shed (___) MW of load."
- or
2. ISO to Affected LCC: "Implement OP 7, manually restore (___) MW of load."

Acknowledgment by Affected LCC:

1. Affected LCC to ISO: "OP 7, manually shed (___) MW of load."
- or
2. Affected LCC to ISO: "OP 7, manually restore (___) MW of load."

Acknowledgment by ISO:

1. ISO to Affected LCC: "That is correct."
(If misunderstandings occur, reissue the directive)

D. EXAMPLES:

Typical Implementation and Acknowledgment Messages

Assumed Conditions:

NEED: Shed 200 MW of load in CONVEX.

Messages:

Directed Action by ISO:

1. ISO to CONVEX: “Implement OP 7, manually shed 200 MW of load.”

Acknowledgment by CONVEX:

1. CONVEX to ISO: “OP 7, manually shed 200 MW of load.”

Acknowledgment by ISO:

1. ISO to CONVEX: “That is correct.”

(If misunderstandings occur, then reissue the directive)

E. UNAFFECTED LCC NOTIFICATION MESSAGES

The unaffected LCCs will be notified by the ISO Control Room Staff after each affected LCC has been directed to implement OP 7. A typical notification and message for the ISO Control Room Staff and System Operators is:

Notification of Implementation by ISO:

1. ISO to Unaffected LCCs: “This is a notification that OP 7 is being implemented in CONVEX. CONVEX has been directed to manually shed/restore (___) MW load.”

Acknowledgment by Unaffected LCCs

1. Unaffected LCCs to ISO: “CONVEX has manually shed/restored (___) MW of load.”

Acknowledgment by ISO:

1. ISO to Unaffected LCCs: “That is correct.”

(If misunderstandings occur, reissue the directive)

OP 7 APPENDIX A 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 1	03/17/04	
Rev 2	02/01/05	Updated to conform to RTO
Rev 3	02/24/05	Updated for 2005 Peak Load Exposure
Rev 4	05/06/05	Update for initiation of VELCO Local Control Center and updated LCC area percentages
Rev 5	02/16/06	Updated for 2006 Peak Load Exposure
Rev 6	03/26/07	Updated for 2007 Peak Load Exposure
Rev 7	03/04/08	Annual Review by Procedure Owner. Revised for NSTAR LCC status and to use ISO-NE all time peak load value.
Rev 8	08/19/08	Old Appendix A Rev 7 has been retired (along with Appendix B). This new Appendix A Rev 8 is a revision of the former Appendix C Rev 3. Minor formatting for consistency; Deleted reference to old Appendix B in 1 st paragraph Deleted the NOTE in Section I.D and I.E Modified the first I. in Section II. E
Rev 9	04/26/10	Annual review by procedure owner; Globally: changed font to Arial, made format, punctuation, spelling, grammar and clarification modifications as applicable; Added Uncontrolled disclaimer to 1 st page and “Uncontrolled” to all page footers; Defined acronym LCC for Local Control Center at first use and used for subsequent instances;
Rev 10	03/22/12	Annual review by procedure owner; 1 st page Footer, deleted 2 nd paragraph of disclaimer, changed pagination format to “X of Y”; Section 1 NOTE Replaced “...instructions...” with “...directives...”; Section I.C., 1 st paragraph, Replaced both instances of “...instruction(s)...” with “...directive(s)...” Section II. C., 1 st paragraph, Added “...accurate...” and “...or issue the directive.” Section II. E., 1 st paragraph, Replaced “...instructed...” with “...directed...” Section II. E., Notification to Unaffected LCCs:, Replaced “...instructed...” with “...directed...”