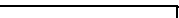


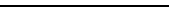
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|   |                              | Review Due Date: February 6, 2025  |

## Attachment K - Voltage Task Force Work Scope

### Table of Contents

|   |   |
|---|---|
| 1. References.....  | 2 |
| 2. Purpose.....   | 2 |
| 3. Introduction .....   | 2 |
| 4. Definitions.....   | 2 |
| 5. Applicability .....  | 3 |
| 6. Responsibilities.....  | 3 |
| 7. Procedure .....  | 3 |
| 7.1 VTF Work Scope .....  | 3 |
| 7.2 Process for Generating Resources Voltage Schedule Coordination .....        | 5 |
| 7.3 Process for ULTC or NLTP Bulk Power Transformers Voltage Coordination ..... | 5 |
| 8. Communications/Reporting Requirements .....                                  | 5 |
| 9. Logging Requirements .....   | 5 |
| 10. M/LCC 15 Attachment K Revision History .....                                | 6 |
| 11. Attachments .....   | 6 |

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|   |                              | Revision Number: 2.2<br>Revision Date February 6, 2024                          |
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## 1. References

ISO New England Operating Procedure No. 12 - Voltage and Reactive Control, Appendix B - Voltage & Reactive Schedules (OP-12B)

ISO New England Operating Procedure No. 17 – Load Power Factor and System Assessment (OP-17)

ISO New England Operating Procedure No. 19 - Transmission Operations, Appendix K - Operating Voltage Limits by LCC (OP-19K)

ISO New England Operating Procedure No. 23 - Resource Auditing, Appendix G - Reactive Resources Required to Perform Reactive Capability Auditing (OP-23G)

Master/Local Control Center Procedure No. 8 - Coordination of Generator Voltage Regulator and Power System Stabilizer Outages, Attachment A - Generators Exempted from AVR Requirements (M/LCC 8A)

Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment E - Transmission System Voltage Criteria Exceptions (M/LCC 15E) Confidential

Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment H - Voltage SOL Identification Procedure (M/LCC 15H)

Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment I - Primary and Secondary Voltage ICCP IDs (M/LCC 15I) Confidential

## 2. Purpose

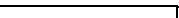
The following describes the Voltage Task Force (VTF) work scope required to support the reliable operation of the New England Transmission System. The VTF is an operational group consisting of Transmission Owners (TOs), the Local Control Centers (LCCs) and ISO New England (ISO) Operations Support Services (OSS) group engineers that may be charged with performing ad-hoc analysis and review of operation data when requested by ISO management.

## 3. Introduction

None

## 4. Definitions

None

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|   |                              | Revision Number: 2.2<br>Revision Date: February 6, 2024                         |
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|   |                              | Review Due Date: February 6, 2025   |

## 5. Applicability

None

## 6. Responsibilities

When assigned, the applicable member(s) of the VTF is/are responsible for performing the tasks required to complete the actions listed in Section 7.1.

## 7. Procedure

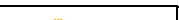
### 7.1 VTF Work Scope

#### A. Load power factor (LPF)

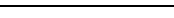
- Execute the OP-17 Load Power Factor Audit program:
  - Review past year's area LPF performance and determine daily and/or seasonal LPF trends
  - Determine, as needed, if there is LPF correlation with actual or near high or low voltage exceedances
  - Review LPF area standards and update as needed
  - Review findings of LPF trends with the Master/Local Control Center (M/LCC) Heads and the NEPOOL Reliability Committee (RC), when appropriate
  - Provide input to LPF mitigation plans developed by Transmission Customers, if requested

#### B. Create basecases to be used for LPF standard review and for operating studies:

- Determine projects to be included in the basecase build
- Build and review the following VTF basecases:
  - Light load
  - Intermediate load biased for high voltage
  - Intermediate load biased for low voltage
  - Heavy load

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- C. Review incoming new generator assets to determine voltage control ability. For units controlling voltage >115 kV, develop & assign voltage schedules and update applicable operating documents.
- D. Execute the OP-12D transmittal process
- E. Unit MVar capabilities:
  - Review latest MVAR test results
  - Review and update unit D curves
- F. Evaluate voltage guides
  - Review and evaluate the effectiveness of existing voltage guides in managing voltage issues as shown by the results from a contingency analysis (CA) and/or the Real-Time Network (RTNET) when requested by ISO
- G. Review and maintain the technical provisions of:
  - ISO New England Operating Procedure No. 12 - Voltage and Reactive Control, Appendix B - Voltage & Reactive Schedules (OP-12B)
  - ISO New England Operating Procedure No. 17 Load Power Factor and System Assessment, Appendix A – Area Definitions (OP-17A)
  - ISO New England Operating Procedure No. 19 - Transmission Operations, Appendix K - Operating Voltage Limits by LCC (OP-19K)
  - Master/Local Control Center Procedure No. 8 - Coordination of Generator Voltage Regulator and Power System Stabilizer Outages, Attachment A - Generators Exempted from AVR Requirements (M/LCC 8A)
  - Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment E - Transmission System Voltage Criteria Exceptions (M/LCC 15E) Confidential
  - Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment H - Voltage SOL Identification Procedure (M/LCC 15H)
  - Master/Local Control Center Procedure No. 15 - System Operating Limits Methodology, Attachment I - Primary and Secondary Voltage ICCP IDs (M/LCC 15I) Confidential
- H. Optimize voltage schedules of controlling devices:

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- List Primary and Secondary Voltage ICCP IDs Referenced by MLCC 15 Att I
- Review system operating voltage corresponding with Operating Issues.
- Conduct operating studies to coordinate voltage schedules of Resources connecting to the 345 kV, 230 kV and 115 kV to improve reactive reserves in the system, when consulted by the ISO
- Review and conduct operating studies to determine appropriate no-load tap position (NLTP) settings of bulk power transformers, when consulted by the ISO

## 7.2 Process for Generating Resources Voltage Schedule Coordination

- A. Voltage schedules for each Resource listed in OP-12B are selected based on the applicable TO's system specific requirements. In general, these schedules are developed based on the normal operating transmission voltage at the Resource point of connection as well as the local system needs for reactive power control. When determining the appropriate voltage schedule and tolerance band, the VTF may perform additional studies to confirm that the scheduled voltage is appropriate to support system voltages within established voltage limits and to maintain adequate levels of leading and lagging reactive reserves.

## 7.3 Process for ULTC or NLTP Bulk Power Transformers Voltage Coordination

- A. Voltage Schedules of bulk power transformers listed in OP-12B are selected by the TO to meet specific local and system requirements and to maintain equipment within safe and reliable voltage levels.

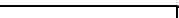
When system performance may be improved by optimizing voltage schedules, ISO and the VTF may conduct an ad-hoc study to review the existing voltage schedule of ULTC (under-load-tap-changing) autotransformers or NLTP settings of one or more autotransformers to achieve optimal voltage levels on the transmission system and to provide the maximum protection for contingencies that can lead to high or low voltages.

## 8. Communications/Reporting Requirements

None

## 9. Logging Requirements

None

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## 10. M/LCC 15 Attachment K Revision History

| Rev. No. | Date     | Reason   |
|----------|----------|--|
| 0        | 03/11/20 | Initial version  |
| 1        | 03/09/21 | Annual review performed; instructions updated to current practices   |
| 2        | 02/24/22 | Annual review performed by procedure owner;<br>Added OP-17 to References;<br>Removed 3 <sup>rd</sup> bullet of Section 7.1 B.;<br>Added OP-17A to list under Section 7.1 G.;<br>Added “corresponding with Operating Issues” to 2 <sup>nd</sup> bullet of Section 7.1 H.;<br>Removed “in the system for autotransformers” from 4 <sup>th</sup> bullet of Section 7.1 H. |
| 2.1      | 02/08/23 | Annual review performed by procedure owner requiring no intent changes;<br>Formatted Section 7.1 VTF Work Scope;<br>Minor grammatical edits;<br>Made administrative changes needed to publish a Minor Revision.  |
| 2.2      | 02/06/24 | Annual review performed by procedure owner requiring no changes;<br>Made administrative changes needed to publish a Minor Revision.  |
|          |          |  |

## 11. Attachments

None