



NERC Standard: VAR-001-1, Requirement 5

Acceptable Corroborating Evidence: “All New England Customers Must Purchase Schedule 2 ‘Reactive Supply and Voltage Control from Generation Source Service’, per ISO-NE Tariff, II.4.”

ISO New England Inc.

Reliability & Operations Compliance

Corroborating Evidence Interpretation No. 3, Revision 1

Effective Date – January 8, 2010

Background:

ISO New England Inc. (“ISO-NE”) is the not-for-profit corporation responsible for the reliable operation of New England’s bulk power generation and transmission system. It also administers the region’s wholesale electricity markets and manages the comprehensive planning of the regional bulk power system. ISO-NE is an organization that has registered with the North American Electric Reliability Corporation (“NERC”) as a Reliability Coordinator, Balancing Authority, Interchange Authority, Transmission Operator, Transmission Service Provider, Planning Authority, Resource Planner, and Transmission Planner.

The Northeast Power Coordinating Council (“NPCC”) is NERC’s delegated authority for the administration of the NERC Compliance Monitoring and Enforcement Program (“CMEP”) within NPCC’s boundaries of Eastern North America.

NPCC, in its role of administering the CMEP, performs periodic audits of registered entities that are users, owners, or operators of the New England Bulk Power System. In the conduct of such audits the NPCC auditors have frequently sought corroborating evidence or other information from ISO-NE, based on ISO-NE’s substantial authorities and responsibilities as both a Regional Transmission Organization (“RTO”) and as defined by its aforementioned registrations with NERC. The corroborating evidence sought by NPCC is used to determine that the entity undergoing the audit has complied with certain requirements of the NERC Reliability Standards that specify a required action on the part of the New England based entity relative to the rules and procedures emanating from ISO-NE’s FERC approved Transmission Tariff (“ISO Tariff”).

Given the repetitive nature of many of these requests, NPCC and ISO-NE have joined to provide an agreed to set of “Corroborating Evidence Interpretations” in order to satisfy the requirements of applicable NERC Reliability Standards. These interpretations do not preclude other evidence that may be introduced by the registered entity and accepted by the NPCC auditing body. In addition, these interpretations may not be construed as modifying or contradicting any part of any ISO Procedure or any part of the ISO’s Tariff. In the event that a Participant believes that any part of these Interpretations does conflict with the ISO’s Procedures or Tariff, the ISO urges the Participant to bring that matter to its attention immediately.”

Document Control:

As a minimum, all Corroborating Evidence Interpretations will be reviewed on an annual basis. Any required updates, annual or otherwise, will be processed in accordance with the following:

The Corroborating Evidence Interpretations shall be given a Revision Number and an Effective Date. The current Revision will remain in effect until such time as ISO-NE and NPCC agree to updates of these documents. At the time of the update a new Revision Number and Effective Date will be assigned.

Relevant NERC Standard:

NERC Standard: VAR-001-1 — Voltage and Reactive Control

R5. Each Purchasing-Selling Entity shall arrange for (self-provide or purchase) reactive resources to satisfy its reactive requirements identified by its Transmission Service Provider.

Explanation of How This Requirement Applies and/or Does Not Apply to Purchasing-Selling Entities and Transmission Service Provider Entities in New England

In the New England Area, it is the Transmission Operators (ISO-NE and the associated Local Control Centers (“LCCs”)) that identify the reactive requirements and not the Transmission Service Providers. ISO-NE and the associated LCCs do not assign specific reactive requirements to individual Purchasing-Selling Entities. Therefore, Purchasing-Selling Entities in New England do not have any reactive requirements assigned to them that they would need to arrange to satisfy.

The following is an explanation of how ISO and the LCCs ensure that voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in real time. In accordance with the Transmission Operating Agreement between the ISO and the Transmission Owners, the LCCs generally dispatch voltage and reactive power, but the ISO coordinates the voltage and reactive dispatch of facilities, as necessary, if the LCCs are unable to maintain normal voltage schedules. The ISO also coordinates with the LCCs on the settings for dynamic reactive resources and approves or directs changes to such settings.¹ The ISO and LCCs determine the reactive power needs of discrete areas within the New England bulk power system and publish the voltage schedules with which generating units and transmission equipment at key transmission stations are required to comply in ISO Operating Procedure No. 12 (“OP 12”), “Voltage and Reactive Control.”²

Generating facilities and transmission equipment at key transmission stations connected to the bulk power transmission system and sub-transmission system are expected to comply with the voltage schedules in OP 12 and operate according to reactive capability curves, as described in ISO Operating Procedure No. 14 (“OP 14”), “Technical Requirements for Generators, Demand Resources and Asset Related Demands.”³ Besides the use of generator reactive capabilities, the ISO and LCC dispatch shunt capacitors/reactors and develop effective transformer voltage schedules and fixed tap settings to achieve desired voltages and reactive conditions. To maintain reliability within the ISO Reliability Coordinator Area and, specifically, to maintain transmission voltages on the New England Transmission System within acceptable limits, generators and other resources are operated to produce

¹ See Transmission Operating Agreement, Sections 3.02(g) & (j)(ii) and 3.06(a)(ii)(D) & (E) posted on ISO Web site at <http://www.iso-ne.com/regulatory/toa/index.html>

² See ISO New England Operating Procedure No. 12, “Voltage and Reactive Control,” Section II and ISO New England Operating Procedure No. 12 “Voltage and Reactive Control, Appendix B,” both of which are posted on the ISO Web site at http://www.iso-ne.com/rules_proceeds/operating/isone/op12/index.html

³ See ISO New England Operating Procedure No. 14 “Technical Requirements for Generators, Demand Resources and Asset Related Demands” and ISO New England Operating Procedure No. 14, “Technical Requirements for Generators, Demand Resources and Asset Related Demands – Appendix B,” both of which are posted on the ISO web site at http://www.iso-ne.com/rules_proceeds/operating/isone/op14/index.html

(or absorb) reactive power. The ISO schedules generating resources for energy and reserves with recognition of reactive constraints, as outlined in ISO Manual 11, Section 5.⁴

ISO-NE OATT Schedule 2, "Reactive Supply and Voltage Control from Generation Source Service" (or "VAR Service") is provided through ISO-NE to support Regional Network Service and Through or Out Service on the New England Transmission System (both of which services have a direct impact on voltage and reactive constraints that are reflected in the ISO's operation of the New England Transmission System).⁵ VAR Service from generator and non-generator dynamic reactive resources is necessary to maintain reliable transmission voltage levels on the New England Transmission System. All dynamic reactive resources (*e.g.*, generating units, SVCs, STATCOMs) within ISO Reliability Coordinator Area that are under the ISO's operational control are required to provide VAR Service.

⁴ See ISO New England Manual for Market Operations, Manual M-11, Section 5.2.4, posted on the ISO Web site at http://www.iso-ne.com/rules_proceeds/isone_mnls/index.html

⁵ See ISO New England Inc. FERC Electric Tariff No. 3, Section II - Open Access Transmission Tariff, Section II.4, pages 58-59 (Sheet #s 454-455 and Schedule 2, pages 272-279 (Sheet #s 735-736F posted on the ISO Web site at http://www.iso-ne.com/regulatory/tariff/sect_2/oatt/index.html