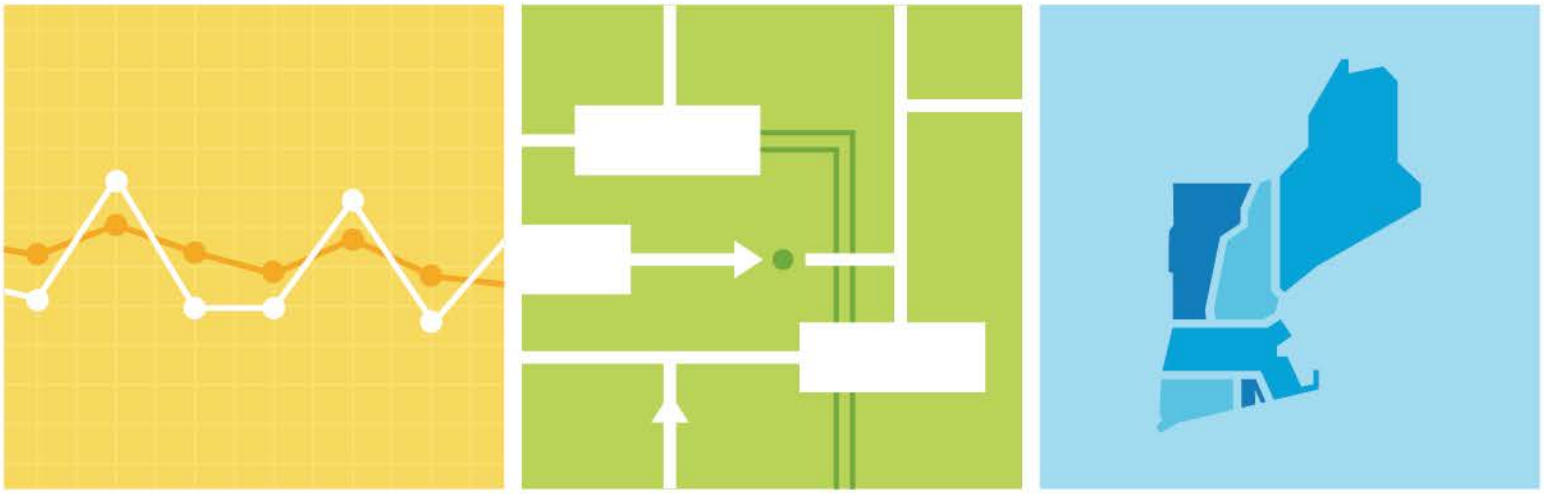
Compliance Bulletin for PRC-001, PRC-019 and PRC-024

MARCH 29, 2019



In case of a discrepancy between this Compliance Bulletin and a NERC Reliability Standard or an ISO New England Operating Document, the NERC Reliability Standard or the ISO New England Operating Document shall govern.

Bulletin Applicability

This compliance Bulletin applies to PRC-001-1.1(ii) (PRC-001) Requirement R3, PRC-019-2 (PRC-019) and PRC-024-2 (PRC-024) Requirement R1 for underfrequency relays.

PRC-001 Requirement R3

NERC PRC-001 Requirement R3 states:

R3. *A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.*

R3.1. *Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.*

- *Requirement R3.1 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.*

R3.2. *Each Transmission Operator shall coordinate all new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities.*

ISO New England is registered as a Transmission Operator and the Balancing Authority for New England. Per PRC-001 Requirement R3.1, Generator Operators shall coordinate new protective systems and all protective system changes with ISO New England. Governance Participants (including but not limited to those who represent Generator Operators) shall provide any additional information required for Protection Systems in accordance with ISO New England Planning Procedure PP5-1: Procedure for Review of Governance Participant's Proposed Plans.

In accordance with Section III of ISO New England Operating Procedure No. 24 - Protection Outages, Settings and Coordination (OP-24), TOs, TOPs, GOs and GOPs shall also collaborate and, when necessary, coordinate the design, construction and commissioning of any new or modified protection system with the owners and operators of all other affected facilities. TOs and GOs shall comply with the requirements related to protection systems included in interconnection agreements with other entities. In addition, generators 75 MVA and above shall provide models and other information regarding the characteristics of protection systems per Section VI.B of OP-24.

PRC-019 Requirements

NERC PRC-019 Requirements R1 and R2 state:

R1. At a maximum of every five calendar years, each Generator Owner and Transmission Owner with applicable Facilities shall coordinate the voltage regulating system controls, (including in-service1 limiters and protection functions) with the applicable equipment capabilities and settings of the applicable Protection System devices and functions. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

1.1. Assuming the normal automatic voltage regulator control loop and steady-state system operating conditions, verify the following coordination items for each applicable Facility:

1.1.1. The in-service limiters are set to operate before the Protection System of the applicable Facility in order to avoid disconnecting the generator unnecessarily.

1.1.2. The applicable in-service Protection System devices are set to operate to isolate or de-energize equipment in order to limit the extent of damage when operating conditions exceed equipment capabilities or stability limits.

R2. Within 90 calendar days following the identification or implementation of systems, equipment or setting changes that will affect the coordination described in Requirement R1, each Generator Owner and Transmission Owner with applicable Facilities shall perform the coordination as described in Requirement R1. These possible systems, equipment or settings changes include, but are not limited to the following [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]:

- *Voltage regulating settings or equipment changes;*
- *Protection System settings or component changes;*
- *Generating or synchronous condenser equipment capability changes; or*
- *Generator or synchronous condenser step-up transformer changes.*

When setting limiters and protection devices, Generator Owners and Transmission Owners with applicable facilities shall ensure that the NX-12D capabilities are either maintained or modified to reflect equipment limitations.

ISO UFLS studies assume Volts per Hz (V/Hz) does not exceed 1.18 per unit for longer than two seconds cumulatively per simulated event, and shall not exceed 1.10 per unit for longer than 45 seconds cumulatively per simulated event at each generator bus and generator step-up transformer high-side bus. V/Hz relay trip settings that are above these values are acceptable without detailed ISO review. Relay settings for review should be communicated to ISO using an ISO Customer Service AskISO with a reference to PRC-019 for issue tracking.

PRC-024 Underfrequency Relaying and PRC-006-NPCC more Stringent Requirements

PRC-024 calls for each Generator Owner that has generator frequency protective relaying activated to trip its applicable generating unit(s) to set its protective relaying such that the generator frequency protective relaying does not trip the applicable generating unit(s) within the "no trip zone" of PRC-024 Attachment 1, subject to certain exceptions. Within the NPCC region, Generator Owners must follow the underfrequency relay setting requirements of regional standard PRC-006-NPCC. This regional standard requires generators to set protection to trip at lower frequencies than the PRC-024 standard.

Revision	Date	Reason
0	May 8, 2017	Initial Issue
1	March 29, 2019	For PRC-001 refer to ISO Operating Procedure OP-24, other minor revisions
1.1	April 2, 2019	Add reference to Planning Procedure PP5-1