DECEMBER 12, 2022

RSSC
Reliability Standards Development Update

Helen Lainis
Compliance Assurance

ieso
Connecting Today. Powering Tomorrow.

Extreme Cold Weather Grid Operations, Preparedness, and Coordination

Status:

- Final ballots concluded at September 30, 2022 for the following standards and implementation plan:
  - EOP-011-3 – Emergency Operations: Passed 95.86/83.64
  - EOP-012-1 – Extreme Cold Weather Preparedness and Operations: Passed 95.54/79.04
- NERC filed for regulatory approval on October 28, 2022; requesting that FERC consider approving them on a expedited timeframe.

Extreme Cold Weather Grid Operations, Preparedness, and Coordination: Feedback from SDT

Q1 – How is temperature swing incorporated?

- Design freeze protection to the 0.2 percentile temp (ECWT) and include 20 mph concurrent wind for Generation.
- With regards to CAPS, must perform any time there is cold weather reliability event above the unit's ECWT temp.
- For new plants a constant 20 mph wind.
- For existing plants, the GO makes the determination - 20 mph wind should be considered as a best practice for existing plants as well.

Q2 – Use of previous operational data as sufficient to meet requirements?

- Yes

ieso
Connecting Today. Powering Tomorrow.

Phase II Modifications to BAL-003-2
Frequency Response and Frequency Bias Setting

- **Status**

  Draft 1 comment period and balloting concluded September 7, 2022 – Failed: 88.89/43.75

- **Proposed Revisions**

  1. Proposing a new requirement in proposed BAL-003-3 (Requirement R5), that a Balancing Authority must have an Operating Process as part of its Operating Plan to address the needed Frequency Responsive reserves.

  2. Proposing Requirements R6 and R7.

     Requirement R6 is modeled after the VAR-002-4.1, Requirement R1 and requires the Generator Operator to operate generators with the Governor in service unless the Balancing Authority has been notified that the Governor is out-of-service.

     Requirement R7 states that the Generator Owner is responsible to ensure minimum settings for the Governor droop and dead-band or notification to the Balancing Authority if the settings are not within these minimum settings

ieso
Connecting Today. Powering Tomorrow.

Phase II Modifications to BAL-003-2

Frequency Response and Frequency Bias Setting

Comments:

Disagreement with the premise of the project; i.e. that there is a need to address concerns with the current performance metric for Balancing Authorities (BAs) due to "detuning." To date, not aware of any evidence that illustrates actual "detuning" events.

Opposed to the introduction of new requirement, R5, because the implementation of an Operating Process (day-ahead to seasonal) for frequency response reserves would require significant changes to existing operational planning processes that would outweigh any potential reliability benefits.

> This would include a daily process to quantify the expected amount of frequency response available to the system based on available resources. Many BAs' capabilities to quantify frequency responsive reserves is limited to, at the most frequent, seasonal/ad hoc studies due to the complex nature of the resource models used to quantify frequency responsive reserves.

ieso
Connecting Today. Powering Tomorrow.

Verifications of Models and Data for Generators – MOD-026-2

Status

Draft 2 comment period and balloting is due January 18, 2023**.** SDT addressed comments received from Draft 1.

Standard(s) Affected

MOD-026-1: Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions

MOD-027-1: Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions

ieso
Connecting Today. Powering Tomorrow.

Verifications of Models and Data for Generators – MOD-026-2

Summary of Proposed Revisions

- MOD-026 and MOD-027 are merged
- TP to provide clear requirements and processes (R1)

  - Acceptance criteria, types of models, format, etc.
  - Process for submittal

- EMT Model requirements (R6)

  - Provisions for legacy equipment
  - More detailed package of information required
  - Verify documentation with model
  - Validate with testing (OEM device testing & field test)

- TP reviews in alignment with developed acceptance criteria
- Update model required if impact to dynamic performance
- Synchronous condenser, FACTS devices, HVDC Facilities

ieso
Connecting Today. Powering Tomorrow.

Verifications of Models and Data for Generators – MOD-026-2

Proposed Implementation Plan:

- 1-year implementation plan for Requirements R1, R7, R8, and R9, with
- An additional 3 years for compliance with Requirements R2-R6 for newly applicable Facilities.
- For existing Facilities, the Implementation Plan proposes the 10-year reoccurring periodicity is maintained from the date of previous model verification.

Modifications to MOD-025 and PRC-019

Status

- Draft 1 comment period and balloting concluded November 17, 2022.

Standards Affected

- MOD-025-2 – Verification of Real and Reactive Power Capability for BES Facilities
- PRC-019-2 – Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection

ieso
Connecting Today. Powering Tomorrow.

Modifications to MOD-025

Issues with existing MOD-025:

Verification testing activities require significant time, expertise, and coordination; however, they do not result in data that should be used by planners for modeling purposes.

Aim is to retain testing activities are useful and focus on more effective means of collecting useful data for planning models.

Modifications to MOD-025

Summary of Changes

- Applicable entities
- Facilities
- Focus on providing value added information to TP - Composite capability curve
- Three methodology options for Facility Real and Reactive Power capability verification
- Periodicity
- Attachment updates
- Requirement R3 (new)
- Requirement R4 (new)

Modifications to PRC-019

Issues with existing PRC-019-2:

- Mis-coordination between generator capability, control systems, and protection functions.
- Developed with a bias toward synchronous generation and does not sufficiently outline the requirements for all generation resource types.

Modifications to PRC-019

Summary of Changes:

- Applicable Facilities updated to Align with BES definition and reflect installation & operation of IBR Facilities
- Periodicity to six years to align with PRC-005
- Footnote associated with R1 noting as-left settings should be used in coordination study and compliance evidence
- Protective function and Protection System clarification
- R1.2 added, which is specific for IBR generating Facilities - IBR unit defined
- R2 modified to align with PRC-027 and added IBR unit specific language
- Attachment 1 updates for IBR language

ieso
Connecting Today. Powering Tomorrow.

Modifications to VAR-002-4.1

Generator Operation for Maintaining Network Voltage Schedules

- **Status**

  Draft 1 comments and balloting due January 13, 2023.

- **Purpose**

  Clarify VAR-002-4.1, Requirement R3, in regards to whether the GOP of a dispersed power resource must notify its associated TOP upon a status change of a voltage controlling device on an individual generating unit; for example, if a single inverter goes offline in a solar photo-voltaic (PV) Facility.

  Address recommendations from Enhanced Periodic Review of Voltage and Reactive Standards" for IBR Voltage/VAR control and operation.

ieso
Connecting Today. Powering Tomorrow.

Modifications to PRC-002-3: Disturbance Monitoring and Reporting Requirements

Status

-Final Ballot for Draft 2 is due December 16, 2022.

- Draft 2 Ballot passed (78.42/96.09) on November 14, 2022.

Scope of Proposed Revisions

-Clarify the necessary notifications in Requirement R1, Part 1.2 relative to FR data, and clearly identify the BES Element owners that need to have FR data for transformers and transmission lines with the associated identified bus

ieso
Connecting Today. Powering Tomorrow.

Modifications to PRC-023 – Transmission Relay

Status

Draft 1 comment and balloting concluded December 5, 2022. Passed – 78.46/99.36

Purpose

Remove PRC-023-4 Requirement R2 in order to eliminate entities disabling their OOSB elements unnecessarily. It will remove an unnecessary exclusion (Attachment A – 2.3) for relays that no longer need an exclusion.

ieso
Connecting Today. Powering Tomorrow.

Modifications to IRO-010 and TOP-003

Status

Draft 1 comments and balloting is due December 15, 2022 for the following:

-IRO-010- – Reliability Coordinator Data Specification and Collection

-TOP-003-6 – Transmission Operator and Balancing Authority Data and Information Specification and Collection

Purpose

As written the standards create a zero-defect expectation for each Registered Entity receiving a data specification to demonstrate perfect performance on every item in the data specification for an entire audit period (excessive administrative burden and retention to demonstrate compliance). Proposing a risk-based approach where performance triggered upon an event or unresolved data conflicts between entities.

Evaluate removing other data exchange requirements dispersed in other standards. This may require enhancing the standards to allow each Registered Entity with responsibilities to perform the tasks identified in IRO-010-2 and TOP-003-3 the ability to request and receive any information it needs from other Registered Entities to perform those tasks.

NERC Standards Development Improvement Process

NERC Board of Trustees approved a resolution to adopt proposed changes to the NERC Rules of Procedure (and standards development process). These include:

- RSTC will be able to create SARs for Standards Committee acceptance without the formation of a SAR drafting team.
- SDTs will be able to minimize posting periods (as they so determine).
- Elimination of the final ballot to prevent entities who did not vote in a passing ballot to deny the standard from passing after the fact.
- Board must have the authority to submit a standard to respond to a FERC directive in order to meet its ERO obligations.
- NERC Staff is directed to manage a Registered Ballot Body review process.

FERC NOPR: Reliability Standards to Address Inverter-Based Resources

-Issued November 17, 2022

-Notice of proposed rulemaking to direct NERC to develop new or modified Reliability Standards that address the following reliability gaps related to inverter-based resources (IBR):

- data sharing;
- model validation;
- planning and operational studies;
- performance requirements.

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca

@IESO_Tweets

linkedin.com/company/IESO

ieso
Connecting Today. Powering Tomorrow.