NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Actions

Project 2023-04 Modifications to CIP-003

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM

Board of Trustees Meeting

December 10, 2024

Project 2023-04 Modifications to CIP-003

- Reliability Benefits
  - Puts controls in place to protect low-impact assets by:
    - Authenticating remote users
    - Protect the authentication information in transit
    - Detect malicious communication assets

Project 2023-04 Modifications to CIP-003

- Action
  - Adopt
    - Reliability Standard – CIP-003-11 - Cyber Security – Security Management Controls

Questions and Answers

Project 2023-07 Transmission System Planning Performance Requirements for Extreme Weather

Action

Adopt the following standard documents and authorize staff to file with the applicable regulatory authorities [*final materials to be posted December 2, 2024*]:

- Reliability Standard – TPL-008-1 Transmission System Planning Performance Requirements for Extreme Temperature Events

  [TPL-008-1 Standard]

- Proposed New Definition for inclusion in the Glossary of Terms used in NERC Reliability Standards

  [Extreme Temperature Assessment]

- Implementation Plan

  [Implementation Plan]

- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)

  [VRF VSL Justification – TPL-008-1]

Background

On June 15, 2023, the Federal Energy Regulatory Commission (FERC) issued Order No. 896, a final rule directing NERC to develop a new Reliability Standard or modifications to Reliability Standard TPL-001-5.1 that would address concerns pertaining to transmission system planning for extreme heat and extreme cold temperature events.[1]

In summary, FERC directed NERC to require the following in its new or revised standard:

1. The development of benchmark planning cases based on major prior extreme heat and cold weather events and/or meteorological projections;
2. Planning for extreme heat and cold weather events using steady-state and transient stability analyses expanded to cover a range of extreme weather scenarios including the expected resource mix's availability during extreme heat and cold weather conditions, and the wide-area impacts of extreme heat and cold weather;
3. Development of corrective action plans that mitigate any instances where performance requirements for extreme heat and cold weather events are not met.

FERC directed NERC to submit the new or modified Reliability Standard within 18 months of the date of publication of the final rule in the Federal Register, which is December 23, 2024.

[1] Order No. 896, *Transmission System Planning Performance Requirements for Extreme Weather*, 183 FERC ¶ 61,191 (2023).

Project 2023-07 developed proposed Reliability Standard TPL-008-1 Transmission System Planning Performance Requirements for Extreme Temperature Events to address the FERC directives in Order 896.

Summary

Proposed Reliability Standard TPL-008-1 – Transmission System Planning Performance Requirements for Extreme Temperature Events is a new Reliability Standard, developed in response to Order No. 896, focused specifically on improving how Planning Coordinators and Transmission Planners plan for the potential impacts of extreme heat and extreme cold temperature events on the Reliable Operation of the Bulk-Power System.

The proposed Reliability Standard consists of a framework, consisting of 11 requirements, for the performance of periodic studies assessing the wide-area impacts of extreme heat and extreme cold temperature events on the Bulk-Power System. These periodic studies are referred to as Extreme Temperature Assessments. Proposed Reliability Standard TPL-008-1 would require planning entities in a planning zone, defined in Attachment 1 to the standard, to coordinate with each other on the development of Extreme Temperature Assessments.

The proposed standard includes several key requirements. First, it addresses the need for coordination among planning entities. Second, it establishes guidelines for creating consistent benchmark temperature events and planning scenarios based on those benchmark temperatures. Additionally, the standard outlines requirements for conducting both steady-state and transient stability analyses, including sensitivity cases.

Furthermore, it mandates that entities develop Corrective Action Plans in specific situations where system performance does not meet established requirements. These entities are also required to share their Corrective Action Plans with other relevant organizations that have a need for reliability information, as well as with the applicable regulatory authorities or governing bodies responsible for retail service issues in their jurisdictions.

Proposed Reliability Standard TPL-008-1 addresses a reliability gap in the currently effective transmission planning Reliability Standards, is responsive to the Commission's directives in Order No. 896, and would advance the reliability of the Bulk-Power System by improving how entities plan for the impacts of extreme temperature events on their systems.

Standards Development Process

The Standards Committee (SC) accepted the standards authorization request at its July 19, 2023, meeting. On October 18, 2023, the SC seated the 2023-07 drafting team (DT). Due to the FERC deadline, the SC approved a waiver under Section 16.0 of the Standard Processes Manual on December 13, 2023, to reduce the initial formal comment and ballot period from 45 days to as few as 25 days, reduce any additional formal comment and ballot period(s) from 45 days to as few as 15 days, and reduce the final ballot from 10 days to 5 days.

For the initial posting, the DT proposed a new Reliability Standard TPL-008-1. A proposed draft of TPL-008-1 and the associated Implementation Plan were posted for an initial formal comment period and ballot from March 20–May 3, 2024. The initial draft for TPL-008-1 received 18.69% approval and quorum of 88.22%. The initial draft Implementation Plan received 30.03% approval and quorum of 87.9%.

A revised draft of proposed Reliability Standard TPL-008-1 and the associated Implementation Plan were posted for an additional formal comment period and ballot from July 16 – August 22, 2024. The ballot was extended by four days to reach quorum and received 18.17% approval and quorum of 87.9%. The draft Implementation Plan received 31.97% approval and quorum of 87.58%.

A second revised draft of proposed Reliability Standard TPL-008-1 and the associated Implementation Plan were posted for an additional formal comment period and additional ballot from October 7–21, 2024. The second additional ballot received 51.9% approval and quorum of 84.39%. The draft Implementation Plan received 63.34% approval and quorum of 84.08%.

A third revised draft of proposed Reliability Standard TPL-008-1 and the associated Implementation Plan were posted for an additional formal comment period and ballot from November 4–21, 2024. The third additional ballot passed with an approval rating of 51.9% and quorum of 84.39%. The draft Implementation Plan received a 63.34% approval and quorum of 84.08%.

Nonbinding polls were conducted concurrently with each of the formal comment periods and ballots.

Reliability Standard TPL-008-1 and the associated Implementation Plan will be posted for a final ballot from December 2–6, 2024. The results of both ballots can be found on the project page and will be reviewed with the Board at the meeting.

Minority Issues

Some entities expressed concern about being able to locate and identify all the Planning Coordinators within its zone for the purpose of carrying out the required coordination under the TPL-008-1 standard. Multiple resources were provided to entities, such as, a list of registered Planning Coordinators that are posted publicly under Registration and Certification on the NERC website. It was also encouraged for Planning Coordinators to reach out to their respective Regional Entity(ies) or the larger Planning Coordinators within its zone, as they may already be aware of all Planning Coordinators.

Pertinent FERC Directives

FERC Order 896 paragraphs 35, 39, 40 50, 58, 60, 72, 76, 77, 88, 111, 112, 116, 124, 134, 138, 152, 157, 165, 188, and 193.

Additional Information

A link to the project history and files is included here for reference:
Project 2023-07 Transmission System Planning Performance Requirements for Extreme Weather

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Standards Actions

Project 2023-07 Extreme Heat and Extreme Cold Weather

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM

Board of Trustees Meeting

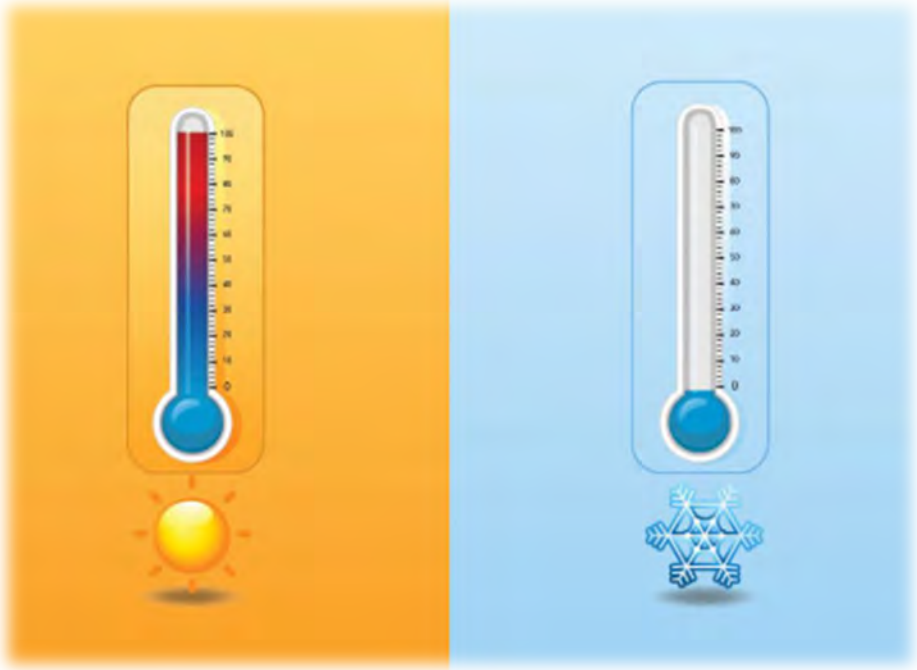
December 10, 2024

Project 2023-07 Extreme Heat and Extreme Cold Weather

- Addresses FERC Order 896
- Ballot Results
- Reliability Benefit
  - Planning entities are better prepared for the impact of extreme heat and extreme cold temperatures on the transmission system

Project 2023-07 Extreme Heat and Extreme Cold Weather

- Action – Adopt
  - TPL-008-1
  - Defined Term – Extreme Temperature Assessment



Questions and Answers

Project 2021-03 CIP-002

Action

Adopt the following standards documents and authorize staff to file with applicable regulatory authorities:

- Reliability Standard – CIP-002-8 – Cyber Security – BES Cyber System Categorization

  [CIP-002-8 Standard] [Redline to last approved]
- Implementation Plan

  [CIP-002-8 Implementation Plan]
- The Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)[1]

  [CIP-002-8 Standard] [Redline to last approved]
- Retirements

  [CIP-002-7– Cyber Security – BES Cyber System Categorization]

Background

Project 2021-03 is assigned four separate Standard Authorization Requests (SARs) that address modifications to CIP-002. The currently proposed revisions to CIP-002 are in response to a portion of one of the four SARs, the Project 2016-02 SAR, which seeks to modify Reliability Standard CIP-002 to address the categorization of certain Transmission Owner Control Centers (TOCC) performing Transmission Operator (TOP) functions as medium impact based on an aggregate weighted value of their Bulk Electric System (BES) Transmission Lines in Criterion 2.12 of Attachment 1.[2] The Standards Committee (SC) assigned a portion of the 2016-02 SAR to the Project 2021-03 Drafting Team (DT) at its March 17, 2021 meeting.

On February 4, 2021, the NERC Board of Trustees (Board) directed NERC staff to study whether the applicability of the Critical Infrastructure Protection (CIP) Reliability Standards adequately address Control Centers. In response to this directive and the scope of the 2016-02 SAR, the DT initiated a field test, consistent with Section 6.0 of the Standards Process Manual. The SC approved the Project 2021-03 Field Test Plan on November 17, 2021. Three fields tests were conducted in 2022 and the final report was posted to the project page in January 2023.

The CIP-002 TOCC field test found that many Transmission Owners (TOs) struggled with how to interpret the Control Center definition. While the current Control Center definition does not specifically identify TOs, a TO may have a Control Center through its ability to monitor and control the BES in Real-time to perform the reliability tasks of a TOP. The field test found the following:

[1] The Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) have not been materially changed from the most recent NERC Board of Trustees-approved version.

[2] Revisions to address the other three SARs will be submitted once they are completed.

- Lack of a common understanding of the term "control" versus "authority" as it relates to TOPs;
- Lack of a common understanding of the term "perform the functional obligations of the TOP" as stated in Attachment 1 of CIP-002-5.1a; and
- Lack of a common understanding of the term "associated data centers" versus TO BES Cyber Assets capable of controlling transmission Facilities.

In response to the SAR, Project 2021-03 proposes modifications to the Control Center definition and Attachment 1 in proposed Reliability Standard CIP-002-8. The CIP-002-8 changes were made to the most recent Board approved version, CIP-002-7.

Summary

Project 2021-03 proposes modifications to the Control Center definition and Attachment 1. The proposed revisions to the Control Center definition expand it to include certain TO's that have the ability to control transmission Facilities.

Attachment 1 was revised to remove references to the "functional obligations" of the different Registered Entities and replace them with references to the reliability tasks performed by those same Registered Entities. This change was made because the NERC Functional Model is no longer being actively maintained and to align with the language used in the Control Center definition.

Significant revisions were made to Criterion 2.12 of Attachment 1 regarding the total aggregate weighted value that is used to account for the impact on the BES. An exclusion clause has been provided to allow Responsible Entities to appropriately categorize their BES Cyber Assets at Control Centers at a level that is commensurate with the associated risk for local systems having limited flow-through or generation export and are primarily designed to serve load. A bright line of 75 MWh was selected to align with pre-existing criteria including the registration criteria for a Distribution Provider, and the registration criteria for a Generator Owner. Establishing a threshold is intended to differentiate between non-impactful load serving areas and areas that are more likely to have an impact on the interconnected BES.

The VRFs and VSLs have not been materially changed from the most recent Board approved version.

Standards Development Process

The initial 45-day formal comment and ballot was conducted from October 31 – December 9, 2023. The initial CIP-002-Y[3] ballot failed to garner ballot body approval and received 32.54% approval with an 88.89% quorum. The Implementation Plan received 42.55% approval with a 90.69% quorum. The non-binding poll received 34.22% approval with an 88.13% quorum.

An additional ballot was conducted April 2 – May 16, 2024. The additional ballot failed to obtain ballot body approval and received 47.72% approval with an 88.55% quorum. The Implementation Plan received 58.73% approval with an 88.28% quorum. The non-binding poll received 34.22% approval with a quorum of 88.13%. The non-binding poll received 54.44% approval with an 87.05% quorum.

[3] CIP-002-Y was used as a placeholder during development because both Project 2021-03 and Project 2016-02 were simultaneously revising CIP-002. The final version number, CIP-002-8, was assigned to Project 2021-03 once the Project 2016-02 revisions were approved by the NERC Board of Trustees as CIP-002-7 on May 9, 2024.

A second additional ballot was conducted from August 29 – October 15, 2024, for proposed Reliability Standard CIP-002-8 receiving an 83.05% approval with an 88.89% quorum. The Implementation Plan received 89.07% approval with an 88.28% quorum. The non-binding poll received 80.11% approval with an 85.61% quorum.

The final ballot was conducted from November 13 – 22, 2024. The results can be found on the project page and will be reviewed with the Board at the meeting.

Minority Issues
None

Pertinent FERC Directives
None

Cost Effectiveness
None

Additional Information
A link to the project history and files is included here for reference:
[Project 2021-03 CIP-002 (nerc.com)]

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Standards Actions

Project 2021-03 CIP-002

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM
Board of Trustees Meeting
December 10, 2024

Project 2021-03 CIP-002

- Reliability Benefits
  - Address the proper identification of Transmission Owner Control Centers performing the functional obligations of a Transmission Operator, specifically those that meet medium impact criteria.

Project 2021-03 CIP-002

- Action
  - Adopt
    - Reliability Standard – CIP-002-8 - Cyber Security – BES Cyber System Categorization
    - Revised Control Center definition

Questions and Answers

Project 2022-03 Energy Assurance with Energy-Constrained Resources

Action

Adopt the following standard documents and authorize staff to file with the applicable regulatory authorities:

- Reliability Standard – BAL-007-1 Energy Assurance

  [BAL-007-1 Standard]

- Reliability Standard – TOP-003-7

  [TOP-003-7 Standard]

- Proposed New Definitions for inclusion in the Glossary of Terms used in NERC Reliability Standards

  [Energy Reliability Assessment]

  [Near-Term Energy Reliability Assessment]

- Implementation Plan

  [Implementation Plan]

- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)

  [VRF VSL Justification – BAL-007-1 and TOP-003-7]

- Retirement

  [Reliability Standard TOP-003-6.1 – Transmission Operator and Balancing Authority Data and Information Specification and Collection]

Background

Fuel assurance and forward energy supply planning are increasingly important as the Bulk Electric System transitions from coal and nuclear resources to wind, solar, natural gas, and hybrid resources. Operational uncertainty is increasing due to conditions under which fuel is unavailable. For this reason, the Reliability and Security Technical Committee (RSTC) formed the Energy Reliability Assessment Task Force (ERATF) to assess risks associated with energy constrained resources.

The ERATF was established to analyze and collaborate with stakeholders on the issues outlined in the " Ensuring Energy Adequacy with Energy-Constrained Resources" whitepaper[1]. The ERATF identified concerns regarding energy sufficiency in the areas of operations, operational planning, and mid- to long-term planning time frames. Furthermore, the ERATF examined the existing NERC Reliability Standards to assess whether there is a requirement for conducting energy reliability assessments. Based on this review, the ERATF developed a technical justification document that proposed enhancements to the NERC Reliability Standards.

[1] Link to: Energy_Adequacy_White_Paper

Summary

The purpose of Project 2022-03 Energy Assurance with Energy-Constrained Resources is to develop Reliability Standards to enhance reliability by requiring entities to perform Energy Reliability Assessments (ERAs) to evaluate energy assurance and develop Operating Plan(s) to address identified risks. The Drafting Team developed a new Reliability Standard, BAL-007-1, to require Balancing Authorities to perform ERAs to assess forecasted Energy Emergencies in the near-term time horizon and develop plans to address any such forecasted Energy Emergencies. The Drafting Team also developed modifications to a new version of the TOP-003 Reliability Standard, TOP-003-7, to ensure that Balancing Authorities have the authority to collect the data needed to perform the Near-Term ERAs.

Standards Development Process

On January 25, 2023, the Standards Committee accepted the Standards Authorization Request. The proposed Reliability Standard BAL-007-1 was posted for an initial 45-day formal comment and ballot period from January 25 – March 11, 2024, and received 6.08% approval and quorum of 89.81%. The initial draft Implementation Plan received 11.58% approval and quorum of 89.49%. The non-binding poll for the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) received 5.49% approval with an 86.59% quorum.

A revised draft of proposed Reliability Standard BAL-007-1 was posted for an additional formal comment and ballot period from May 7 – June 24, 2024. The ballot period was extended by four days to meet quorum and received 17.19% approval and quorum of 81.89%. The revised draft Implementation Plan received 19.04% approval and a quorum of 81.71%. The non-binding poll for the VRFs and VSLs received 10.37% supportive opinions with a 79.27% quorum.

A revised draft of proposed Reliability Standard BAL-007-1 was posted for an additional formal comment and ballot period from September 19 – November 4, 2024, and passed with an approval rating of 81.53% and quorum of 87.92%. The Implementation Plan for BAL-007-1 passed ballot with 83.72% and quorum of 88.33%. The non-binding poll for the VRFs and VSLs received 79.61% supportive opinions with an 85.77% quorum.

Proposed Reliability Standard TOP-003-7 was posted for an initial formal comment and ballot period from September 19 – November 4, 2024, and passed ballot with 92.77% approval and a quorum of 85.38%. The Implementation Plan for TOP-003-7 passed ballot with 76.3% and quorum of 85.83%. The non-binding poll for the VRFs and VSLs received 86.09% supportive opinions with an 84.36% quorum.

Reliability Standards BAL-007-1 and TOP-003-7 and the associated Implementation Plan were posted for a final ballot November 25 – December 6, 2024. The results of the ballots will be reviewed with the Board at the meeting.

Minority Issues

A small minority of entities find this standard to be an administrative burden in nature and do not agree with the proposed Reliability Standard BAL-007-1.

Cost Effectiveness

The drafting team sought stakeholder input on the cost effectiveness of the proposed Reliability Standards (BAL-007-1 and TOP-003-7) during the formal comment periods. Some commenters

felt the BAL-007-1 Reliability Standard would be administrative in nature by requiring registered entities to hire additional staff to address the requirements of the standards, respectively.

Additional Information

A link to the project history and files is included here for reference:
Project 2022-03 Energy Assurance with Energy-Constrained Resources

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Standards Actions

Project 2022-03 Energy Assurance

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM

Board of Trustees Meeting

December 10, 2024

Project 2022-03 Energy Assurance

- Ballot Results
- Reliability Benefit
  - Enhance reliability by requiring entities to perform Energy Reliability Assessments (ERAs) to evaluate energy assurance and develop Corrective Action Plan(s), Operating Plan(s), or other mitigating actions to address identified risks to operations time horizon.

Project 2022-03 Energy Assurance

Action – Adopt

- BAL-007-1
- TOP-003-7
- Defined Terms
  - Energy Reliability Assessment
  - Near-Term Reliability Energy Assessment

Questions and Answers