

Technical Justification

EOP-011-1 Emergency Operations and Planning

Background and Rationale for revisions of EOP-001-2.1b, EOP-002-3.1 and EOP-003-2

Purpose

The purpose of EOP-011-1 is to address the effects of operating Emergencies by ensuring each Transmission Operator and Balancing Authority has developed Operating Plan(s) to mitigate operating Emergencies, and that those plans are coordinated within a Reliability Coordinator Area. The standard streamlines the requirements for Emergency Operations for the BES into a clearer and more concise standard that is organized by Functional Entity in order to eliminate the ambiguity in previous versions. In addition, the revisions clarify the critical requirements for Emergency Operations, while ensuring strong communication and coordination across the Functional Entities.

The requirements of the proposed EOP-011-1 reliability standard support the following Reliability Principles:

Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.

The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.

Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained, and implemented.

Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.

EOP-011-1 consolidates requirements from three existing Emergency Operations standards: EOP-001-2.1b, EOP-002-3.1 and EOP-003-2. The table *Elements for Consideration in Development of Emergency Plans* from Attachment 1 of EOP-001-2.1b were considered by the EOP SDT and incorporated into the requirements of proposed EOP-011-1.

The Project 2009-03 Emergency Operations Standard Drafting Team (EOP SDT) developed EOP-011-1 by considering the following inputs:

- Applicable FERC directives; and
- Five Year Review Team (FYRT) recommendations and considerations of:
 - Independent Expert Review Panel recommendations; and
 - Paragraph 81 criteria.

History and Inputs to Project 2009-03 Emergency Operations

Periodic Review of EOP Standards

The North American Electric Reliability Corporation (NERC) is required to conduct a periodic review of each NERC Reliability Standard at least once every 10 years, or once every five years for any Reliability Standard approved by the American National Standards Institute as an American National Standard.¹ The Emergency Operations Five-Year Review Team (EOP FYRT) was appointed by the Standards Committee Executive Committee on April 22, 2013. The EOP FYRT reviewed the following Emergency Operations standards: EOP-001-2.1b (Emergency Operations Planning), EOP-002-3.1 (Capacity and Energy Emergencies) and EOP-003-2 (Load Shedding Plans) to determine if the standards should be retained, retired or if revisions were needed in the scope of this project in relation to P81 criteria, Independent Expert report and FERC directives.

The scope of the review included consideration of recommendations from the Industry Expert Review Panel report, Paragraph 81 recommendations and criteria, and outstanding FERC Order No. 693 directives, as well as industry comments. The EOP FYRT posted its draft recommendations to revise the standards for stakeholder comment. After reviewing stakeholder comments, the EOP FYRT submitted its final recommendations to the Standards Committee, along with a Standard Authorization Request (SAR). This SAR replaces an earlier SAR, and the new SAR provided the scope for the work of Project 2009-03. The EOP SDT implemented the FYRT recommendations into proposed reliability standard EOP-011-1.

Industry Expert Report²

In 2013 NERC assembled a panel of Industry Experts (the IERP) to review all reliability standards and provide recommendations for consideration in the transition of NERC standards to steady state. For the Emergency Operations and Planning reliability standards, the Industry Experts made the following recommendations:

- EOP-001-2.1b, R6 - P81. Duplicative of R4 and the Attachment
- EOP-002-3.1, R2 - P81. Duplicative - requirement to take action is in R1.
- EOP-002-3.1, R3 - P81. Duplicative of what is required to be in the plan under Attachment 1 of EOP-001.
- EOP-002-3.1, R6 -P81. Duplicative of BAL standards to meet CPS and DCS
- EOP-002-3.1, R9 - P81. This is a market (tariff) issue.
- EOP-003-2, R2 - P81. Duplicative of PRC-010 and TPL standards
- EOP-003-2, R4 - P81. Duplicative of PRC-010 and TPL standards

¹ NERC Standard Processes Manual 45 (2013), posted at http://www.nerc.com/pa/Stand/Documents/Appendix_3A_StandardsProcessesManual.pdf

² NERC Standards Independent Expert Review Project, An Independent Review by Industry Experts, posted at http://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/Standards_Independent_Experts_Review_Project_Report.pdf

- EOP-003-2, R5 - P81. Duplicative of R1 and also covered under standards for TOP (TOP-002-3)
- EOP-003-2, R6 - P81. Duplicative; an entity does the same actions as when not islanded.
- EOP-003-2, R7 - P81. Duplicative of PRC-010 R1

As part of the EOP Five-Year Review process, the EOP FYRT evaluated these recommendations and generally agrees with them, with exceptions and further considerations for the standard drafting team, as noted below:

- EOP-001-2.1b - the EOP FYRT concurred with the recommendation to retire R6 in accordance with the applicable Paragraph 81 criteria (Requirements 6.1 and 6.3 under Criterion B7; Requirement R6.2 under Criterion B6; and Requirement R6.4 under Criterion A). In addition, the EOP FYRT also recommended that the future EOP SDT take into consideration retiring Requirements R3.1 under Criterion B7, Requirement R3.2 under Criterion B7 and Criterion A, and Requirement R3.4 under Criterion B1 of Paragraph 81. The EOP FYRT further recommended revising and merging EOP-001-2.b and EOP-002-3.1 into a single standard; revising Requirements R1, R2 and R5 and reviewing Attachment 1.
- EOP-002-3.1 - in addition to Requirements R6 and R9, the EOP FYRT recommended retiring Requirements R1 under Criterion B7 of Paragraph 81. The EOP FYRT further recommended that the future EOP SDT consider revising and merging EOP-001-2.b and EOP-002-3.1 into a single standard, which would include a revision to Requirement R3 and Attachment 1.
- EOP-003-2 - the EOP FYRT recommended Requirements R2, R4 and R7 be moved to PRC-010-0 and revised in accordance with the other requirements in that standard. In addition to merging EOP-001-2.1b with EOP-002-3.1, the EOP FYRT recommended the future EOP SDT consider merging EOP-003-2, EOP-001-1-2.1b and EOP-002-3.1 into a single standard.

The EOP FYRT made a strong recommendation for the EOP SDT to consider merging and revising EOP-001-2.b and EOP-002-3.1 into a single standard; not only to streamline and clarify the requirements after applying the Paragraph 81 criteria, but also to invoke the continuous improvement cycle of the reliability standards towards results-based standards (RBS).

Paragraph 81³

For a reliability standard requirement to be proposed for retirement or modification based on Paragraph 81 concepts, it must satisfy both: (i) Criterion A (the overarching criterion) and (ii) at least one of the Criteria B (identifying criteria). In addition, for each reliability standard requirement proposed for retirement or modification, the data and reference points of Criterion C should be considered for making a more informed decision.

³ NERC – Paragraph 81 Criteria posted at http://www.nerc.com/pa/stand/project%20200812%20coordinate%20interchange%20standards%20dl/paragraph_81_criteria.pdf

Paragraph 81 recommendations from the Independent Experts and Industry were reviewed and the EOP SDT incorporated those into the development of EOP-011-1.

FERC Directives

In the development of the proposed EOP-011-1 reliability standard, the EOP SDT addressed the outstanding FERC directives in Order No. 693 related to Emergency Operations and planning⁴. The directives applicable to each standard are listed below:

EOP-001-1 Emergency Operations Planning:

- Include reliability coordinators as an applicable entity.
- Consider Southern California Edison's and Xcel's suggestions in the standard development process.
- Clarify that the 30-minute requirement in requirement R2 to state that Load shedding should be capable of being implemented as soon as possible but no more than 30 minutes.
- Includes definitions of system states (e.g. normal, alert, emergency), criteria for entering into these states. And the authority that will declare them.
 - Consider a pilot program (field test) for the system states proposal.
 - Clarifies that the actual emergency plan elements, and not the "for consideration" elements of Attachment 1, should be the basis for compliance.

EOP-002-2 Capacity and Energy Emergencies:

- Address emergencies resulting not only from insufficient generation but also insufficient
- Transmission capability, particularly as it affects the implement of the capacity and energy Emergency plan. Include all technically feasible resource options, including demand response and generation resources.
- Ensure the TLR procedure is not used to mitigate actual IROL violations.

EOP-003-1 Load Shedding Plans:

- Develop specific minimum Load shedding capability that should be provided and the maximum amount of delay before Load shedding can be implemented based on overarching nationwide criteria that take into account system characteristics.
- Require periodic drills of simulated Load shedding.
- Suggest a review of industry best practices in determining nationwide criteria.
- Consider comments from APPA and ISO-NE in the standards development process.

Rationales for Requirements

⁴ Outstanding FERC Order 693 directives listing related to Emergency Operations posted at [Project 2009-03 Directives.xlsx](#)

Proposed reliability standard EOP-011-1 merges EOP-001-2.1b, EOP-002-3.1 and EOP-003-2 into a single standard applicable to the following functional entities:

- Balancing Authority
- Reliability Coordinator
- Transmission Operator

Requirement R1:

The EOP SDT examined the recommendation of the EOP FYRT and FERC directive to provide guidance on applicable entity responsibility that was included in EOP-001-2.1b. The EOP SDT removed EOP-001-2.1b, Attachment 1 and incorporated it into this standard under the applicable requirements. The EOP SDT identified that in Attachment 1 there are elements that would not relate to the Transmission Operator and removed them from this requirement. These elements were listed in the original standard and have been retained in this standard. This also establishes a requirement for the Transmission Operator to create its Operating Plan(s) to mitigate operating Emergencies to address capacity and energy Emergencies.

Requirement R2:

As with Requirement R1, the EOP SDT took the recommendation of the FYRT and the FERC directive to provide guidance on applicable entity responsibility in EOP-001-2.1b, Attachment 1 as it relates to the Balancing Authority. The EOP SDT identified that in Attachment 1 there are elements that would not relate to the Balancing Authority and removed them from this requirement. These elements were listed in the original standard and have been retained in this standard. This also establishes a requirement for the Balancing Authority to create its Operating Plan(s) to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area.

Requirement R3:

The EOP SDT agrees that Transmission Operators and Balancing Authorities should submit Operating Plan(s) to mitigate operating Emergencies to the Reliability Coordinator for review in order for its Reliability Coordinator to ensure reliability risks are identified between Operating Plans to mitigate operating Emergencies in its Reliability Coordinator Area. The EOP SDT also has created this requirement so that it is similar in structure to the EOP-006-2, Requirement 5.1. The Requirement reflects the directive of the Federal Energy Regulator Commission to have the Reliability Coordinator involved in the Operating Plans of the Transmission Operator and Balancing Authority.

“...the Commission finds the reliability coordinator is a necessary entity under EOP-001-0 and directs the ERO to modify the Reliability Standard to include the reliability coordinator as an applicable entity.”

Requirement R4:

The EOP SDT added Requirement R4 to support the coordination of Operating Plans within a Reliability Coordinator Area in order to identify and correct and Wide Area reliability risks.

Requirement R5:

The EOP SDT added the words “within a time period specified by its Reliability Coordinator” to the requirement to point to the timeliness and to the relevancy of the Emergencies and to alleviate excessive notifications by Balancing Authorities and Transmission Operators. This was an existing requirement in EOP-002-3.1 for Balancing Authorities.

Requirement R6:

The EOP SDT retained Requirement R8 from EOP-002-3.1. The Load-Serving Entity does not have any requirements to request an Energy Emergency Alert (EEA) be issued. The Load-Serving Entity could request an EEA be issued through its Balancing Authority. The Load-Serving Entity has no Real-time reliability functionality with respect to EEAs. ; therefore, the EOP SDT elected to remove the Load-Serving Entity in the requirement and Attachment 1. The EOP SDT also ensured Requirement R6 was created to address the FERC directive to have the Reliability Coordinator involved to ensure that the Energy Emergency alert gets initiated.

Conclusion:

The proposed EOP-011-1 reliability standard builds upon the current EOP-001-2.1b, EOP-002-3.1 and EOP-003-2 and with the consolidation of the standards, this will streamline the requirements for Emergency Operations for the BES into a clearer and more concise standard. This new standard aligns these requirements to the appropriate entities needed during Capacity Emergency and Energy Emergency situations on the BES. It establishes a structured roadmap of entity-to-entity communication and a process to ensure proper coordination of capacity situations during emergency events. As such, the proposed EOP-011-1 reliability standard satisfies the Reliability Principles identified at the beginning and is appropriate for approval of the NERC Board of Trustees and other applicable regulatory authorities.