

Project 2009-03 Emergency Operations and Planning

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

Overview

EOP-011-1 is a new standard that consolidates requirements from three existing Emergency Operations standards: EOP-001-2.1b, EOP-002-3.1 and EOP-003-2.

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

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

The purpose of EOP-011-1 is to mitigate the effects of operating Emergencies, up to and including manual Load shedding, by implementing Emergency Operating Plans. 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.

All *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.

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.

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

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
- 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.

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

- 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.

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. Briefly, 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

³ NERC – Paragraph 81 Criteria posted at

http://www.nerc.com/pa/stand/project%20200812%20coordinate%20interchange%20standards%20dl/paragraph_81_criteria.pdf

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

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

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

Rationale for 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. This also establishes a separate requirement for the Transmission Operator to create an Emergency Operating Plan.

Requirement 1.2.1 was added to this standard for the Transmission Operator to address procedures, processes or strategies to prepare for and mitigate Emergencies using voltage control methods, which could include switching of capacitor and reactor banks, generator reactive output and the use of synchronous condensers.

The topic of manual Load shedding is included in Requirement R1 (Transmission Operator Emergency Operating Plan) and Requirement R2 (Balancing Authority Emergency Operating Plan) because this sometimes requires coordination between the Balancing Authority and Transmission Operator. The EOP SDT added Requirement R1.3, a revision of Requirement R5 in EOP-001-2.1b, to establish a process for the Transmission Operator to revise its Emergency Operating Plan to account for changes in its System.

Rationale for R2: 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. The EOP SDT removed EOP-001-2.1b, Attachment 1 and incorporated it into this standard under the applicable requirements. This also establishes a separate requirement for the Balancing Authority to create its Emergency Operating Plan to address capacity and energy Emergencies.

Manual Load shedding is included in Requirement R1 (Transmission Operator Emergency Operating Plan) and Requirement R2 (Balancing Authority Emergency Operating Plan) because this sometimes requires coordination between the Balancing Authority and Transmission Operator.

The EOP SDT added Requirement R2.3, a revision of Requirement R5 in EOP-001-2.1b, to establish a process for the Balancing Authority to revise its Emergency Operating Plan to account for changes in its System.

Rationale for R3: The EOP SDT agrees that Transmission Operators and Balancing Authorities should submit Emergency Operating plans to the Reliability Coordinator for approval in order for the Reliability Coordinator to ensure all Emergency Operating Plans in its Reliability Coordinator Area are coordinated and compatible. This requirement makes the standard applicable to the Reliability Coordinator; clearly and separately identifying the Transmission Operator, Balancing Authority and Reliability Coordinator issues as they relate to the Balancing Authority and Transmission Operator (to address Paragraph 548 of Order 693) and how it needs to be planned for on the BES by the specific Functional Entities.

“...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.”

Rationale for R4: Since Requirements R1 and R2 both require a submittal for approval, Requirement R4 requires approval or disapproval. This aligns with similar requirements in EOP-006-2, Requirement 5.1.

Rationale for R5: This was an existing requirement in EOP-002-3.1 for Balancing Authorities. The EOP SDT has added this as an additional requirement for Transmission Operators. The EOP SDT revised communication of “future system conditions” to “projected system conditions.” The purpose of this requirement is to apprise the Reliability Coordinator of the Transmission Operator’s Real-time operations preparation and planning.

Rationale for R6: This was an existing requirement in EOP-002-3.1 for Balancing Authorities. The EOP SDT revised communication of “future system conditions” to “projected system conditions.” This modification is intended to apprise the Reliability Coordinator of the Balancing Authority Real-time operations preparation and planning.

Rationale for R7: The EOP SDT added the words “as soon as practicable” to the requirement to point to the timeliness and to the relevancy of the Emergencies and to alleviate excessive notifications on Balancing Authorities and Transmission Operators. This was an existing requirement in EOP-002-3.1 for Balancing Authorities.

Rationale for R8: The EOP SDT placed this language in this requirement since it was found in Requirements R6.5 and R7.2 of EOP-002-3.1. The EOP SDT agrees that manual Load shedding and other actions are addressed in the Emergency Operating Plan and it is not necessary to explicitly call for Load shedding to return ACE to zero in this standard. ACE requirements for the Balancing Authority are addressed in the BAL-001 and BAL-002 standards.

Rationale for R9: The EOP SDT retained Requirement R8 from EOP-002-3.1. The Load-Serving Entity has the right, under Attachment 1, to request that an Energy Emergency Alert (EEA) be issued, but it does not have any requirements to do so; therefore, the EOP SDT elected to retain the Load-Serving Entity in the requirement, but not as an applicable entity. If it becomes a reliability issue, the Balancing Authority or Reliability Coordinator will call for the EEA.