NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

EOP-011-1

Project 2009-03 Emergency Operations (EOP)

EOP Standard Drafting Team
Industry Webinar
October 8, 2014

RELIABILITY | ACCOUNTABILITY




Agenda

- Background and overview
- Project Key Milestones
- Five-Year Review
- EOP-011-1 and EOP-011-1 Attachment 1
- FERC Directives
- Questions and Answers

NERC Antitrust Guidelines

- It is NERC's policy and practice to obey the antitrust laws to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.
- It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Public Meeting Guidelines

- Participants are reminded that this meeting is public. Notice of the meeting was posted on the NERC website and widely distributed. Participants should keep in mind that the audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

Project 2009-03 Background

- Nov. 11, 2010 – NERC Standards Committee (SC) authorized moving the Project 2009-03 Emergency Operations Standard Authorization (SAR) forward to standard drafting and appointed a SAR Drafting Team.
- Project 2009-03 involved reviewing and revising
  - EOP-001-0
  - EOP-002-2
  - EOP-003-1
  - IRO-001-1
- Project 2009-03 was placed on hold in late 2010/early 2011 due to NERC Standards prioritization effort.

Project 2009-03 Background

- April 22, 2013 – EOP Up for 5 year Review
- NERC SC appointed eight Subject Matter Experts (SMEs) to serve on the Emergency Operations Five-Year Review Team (EOP FYRT) to review and make recommendations regarding:
  - EOP-001-2.1b
  - EOP-002-3.1
  - EOP-003-2
- August 6–September 19, 2013 – The EOP FYRT developed a set of recommendations which were posted for a 45-day comment period.

Project 2009-03 Background

- October 17, 2013:
  - NERC SC accepted the recommendations of the EOP FYRT
  - Appointed a drafting team
  - Authorized posting the SAR developed by the EOP FYRT
- November 6–December 5, 2013: SAR posted for comment period.

Project 2009-03 Background

- EOP-011-1 was drafted by the Emergency Operations Standard Drafting Team (EOP SDT) through the examination and consideration of:
  - Applicable FERC directives
  - EOP FYRT recommendations
  - Independent Expert Report
  - Paragraph 81 criteria
  - SAR
- EOP-011-1 was posted for informal comment period so industry could review and help guide the current body of work.
- The informal comment period for **EOP-011-1** was open until Friday, April 28.

Key Milestones

- The EOP SDT held a drafting team meeting May 13–15 to review comments and further develop the EOP-011-1 standard.
- EOP-011-1 was posted for the first formal comment period and initial ballot July 2, 2014 – August 15, 2012.
- The EOP SDT held a drafting team meeting August 27 –29, 2014 to review comments and further develop the EOP-011-1 standard.
- EOP-011-1 is currently posted for additional formal comment period and successive ballot.
- Submittal to the Board and subsequent regulatory filing is targeted for the end of 2014 or early 2015.

EOP Standard Drafting Team

Member	Organization
David McRee, Chair	Duke Energy
Bob Staton, Vice Chair	Xcel Energy
Will Behnke	Alliant Energy
Richard Cobb	Midcontinent ISO, Inc.
Jen Fiegel	Oncor Electric Delivery
Fran Halpin	Bonneville Power Administration
Hal Haugom	Madison Gas and Electric
Steve Lesiuta	Ontario Power Corporation, Inc.
Connie Lowe	Dominion Resources Services, Inc.
Greg LeGrave	Wisconsin Public Service Corp.
Brad Young	LG&E/KU

Five-Year Review Projects

Five-Year Review Projects

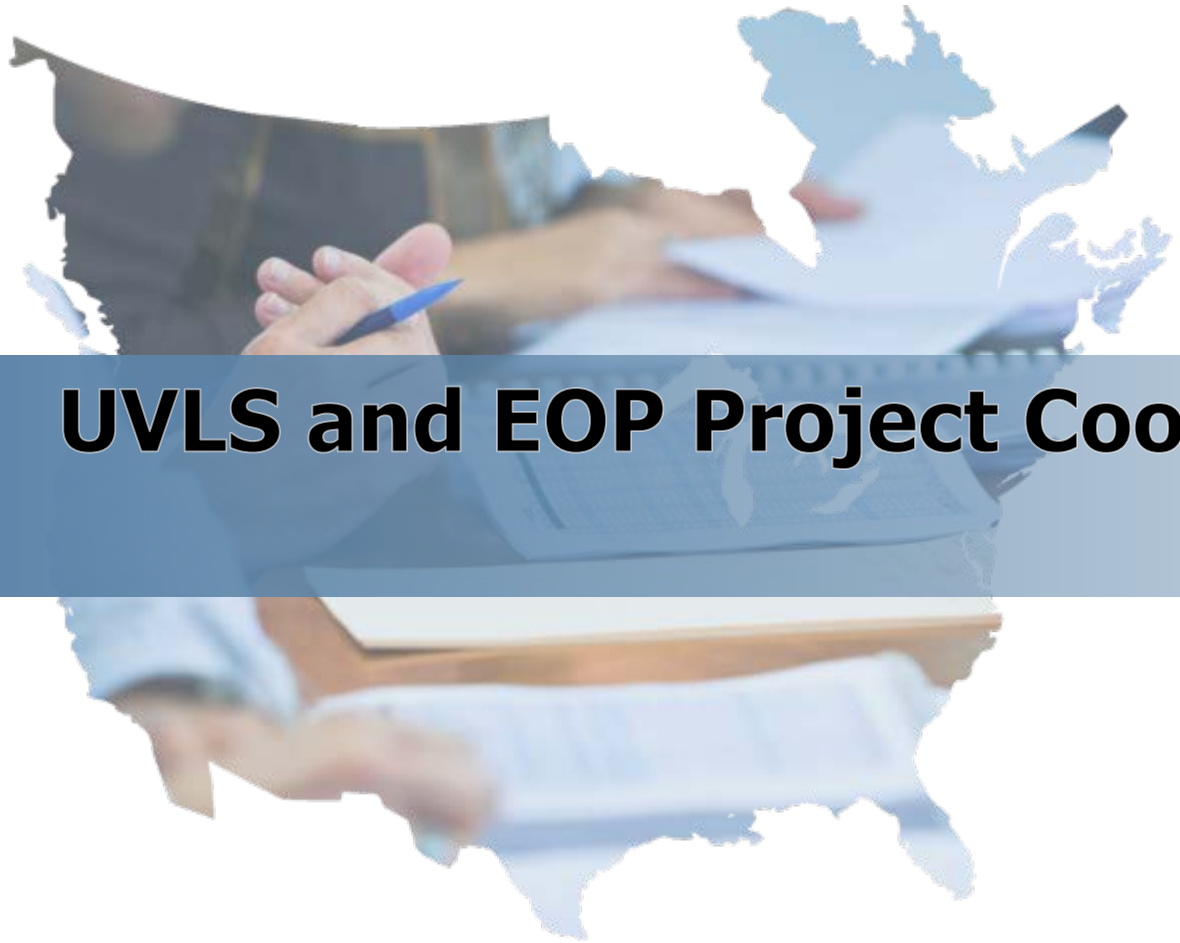
- Five-Year Review Overview
  - Part of NERC's broader objective to transition to a clear, concise, and stable body of world-class, high-quality reliability standards
  - Five-year reviews must be conducted on current standards that are due for assessment and have not been revised in recent standards development projects
    - Required by ANSI-accredited Reliability Standards development process

Industry Webinar: Five-Year Review Projects Overview 05/2013

Five-Year Review Projects

- Five-Year Review Objective
  - Determine whether the Reliability Standard should be:
    1) affirmed;
    2) revised; or
    3) withdrawn.
- Elements of the Five-Year Review
  - Outstanding FERC directives
  - Stakeholder requests for clarity or revision
  - Results-Based Standards (RBS) principles
  - Paragraph 81 principles

EOP FYRT recommendations were submitted to Standards Committee on September 19, 2013 and accepted by SC in October.



UVLS and EOP Project Coordination

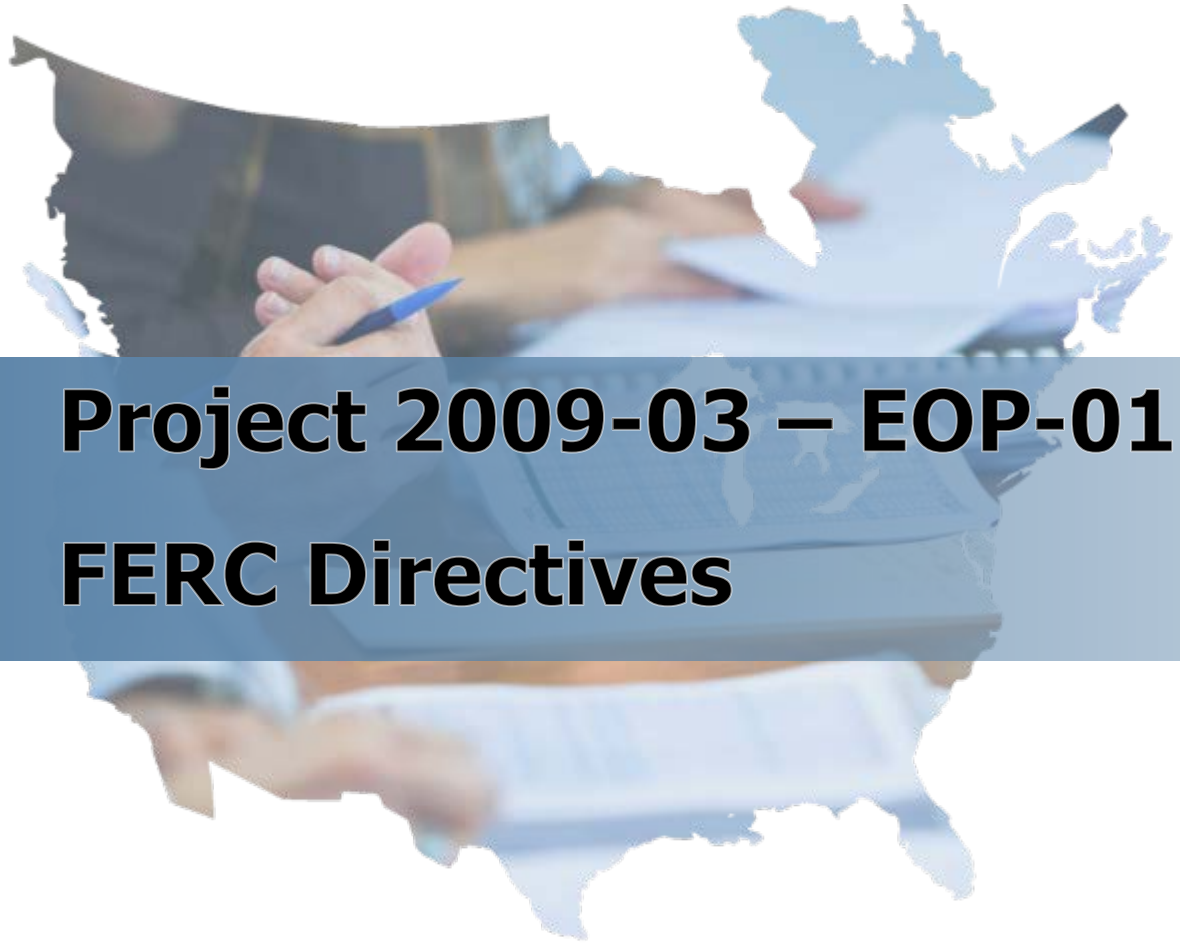
EOP and UVLS Project Coordination

- Project 2009-03 EOP consolidates and replaces EOP-001-2.1b, EOP-002-3.1, and EOP-003-2 with **EOP-011-1**.
- Project 2008-02 Undervoltage Load Shedding (UVLS) consolidates and replaces PRC-010-0, PRC-020-1, PRC-021-1, and PRC-022-1 with **PRC-010-1**.
- The respective performance formerly required by EOP-003-2, Requirements R2, R4, and R7 is reflected in PRC-010-1.
- The EOP and UVLS projects are progressing simultaneously to properly align legacy standard retirements and revised standard implementations.

  April 10, 2014 EOP and UVLS Joint Webinar

Additional Information

- Please contact the respective NERC Standards Developers for more information, to schedule an outreach session, or to be added to a project's email distribution list:
  - Project 2009-03 EOP: Laura Anderson at laura.anderson@nerc.net
  - Project 2008-02 UVLS: Katherine Street at katherine.street@nerc.net



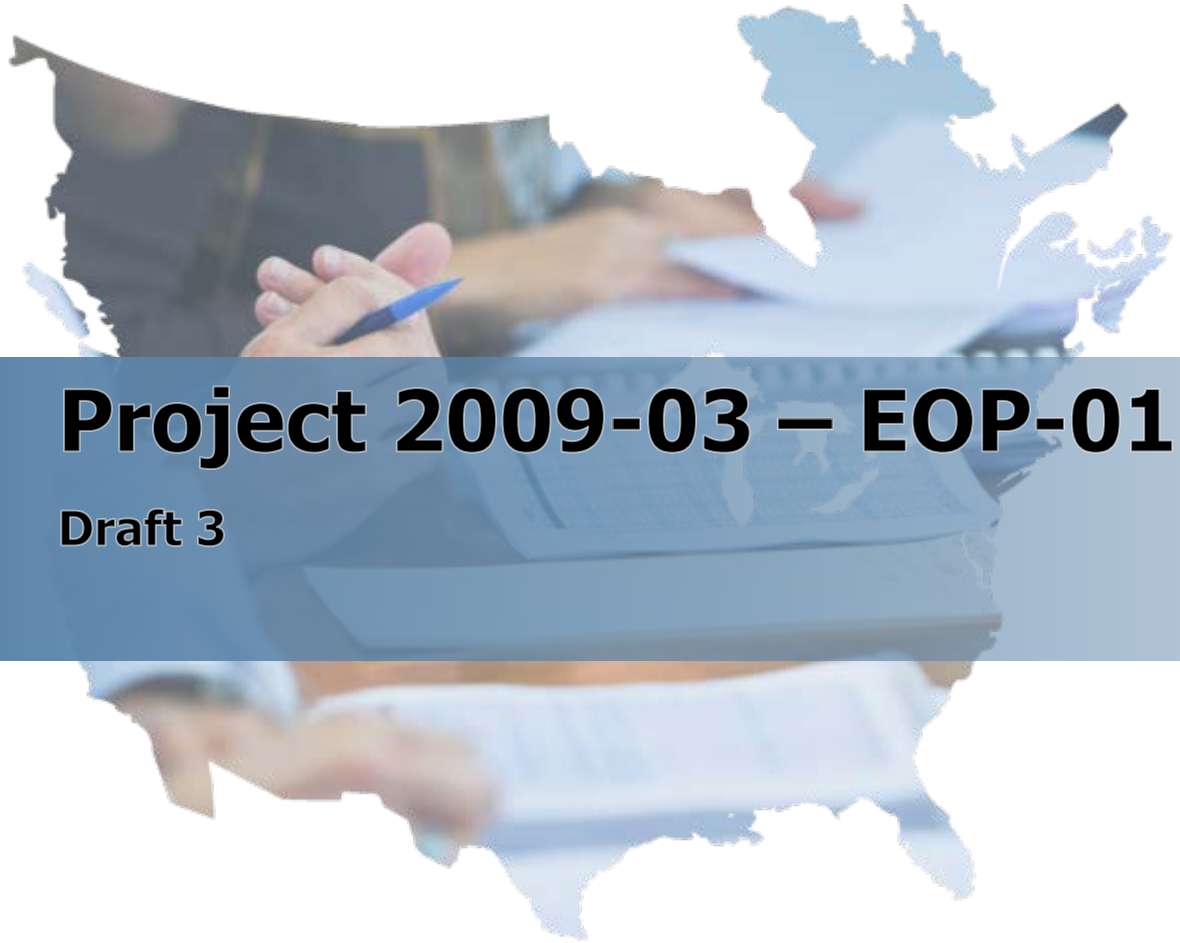
Project 2009-03 – EOP-011-1

FERC Directives

FERC Directives

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 planning.



Project 2009-03 – EOP-011-1

Draft 3

EOP-011-1 Definition Revision

Proposed revised definitions:

Energy Emergency - A condition when a Load-Serving Entity or Balancing Authority has exhausted all other resource options and can no longer meet its ~~customers'~~ expected ~~energy~~ Load obligations.

This defined term was revised to provide clarity that an Energy Emergency is not necessarily limited to a Load-Serving Entity.

EOP-011-1 Definition Revision

This defined term, or variations of it, is also used in the instances below. ***The EOP SDT does not believe that the proposed revisions change the reliability intent of these standard or definitions.***

- BAL-002-WECC – Contingency Reserve
- IRO-005-3.1a — Reliability Coordination — Current Day Operations
- MOD-004-1 — Capacity Benefit Margin
- INT-004-3 – Dynamic Transfers
- Defined term Emergency Request for Interchange

EOP-011-1 Purpose Statement

Purpose of the Standard:

To ~~mitigate~~ address the effects of operating Emergencies by ensuring each Transmission Operator and Balancing Authority has developed ~~Emergency~~ Operating Plan(s) to mitigate operating Emergencies, and that those plans are coordinated within a Reliability Coordinator Area.

EOP-011-1 Functional Entities

Applicable to these Functional Entities:

- Balancing Authority
- Transmission Operator
- Reliability Coordinator

EOP-011-1 Requirement R1

R1. Each Transmission Operator shall develop, maintain and implement a Reliability Coordinator-~~approved~~reviewed ~~Emergency~~ Operating Plan to mitigate operating Emergencies ~~on~~ in its Transmission Operator Area. ~~System. At a minimum, the Emergency~~ The Operating Plan shall include the following, as applicable ~~elements~~: *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations, Operations Planning, Long-term Planning]*

(The list following was taken from the original Attachment 1 of EOP-001-2.1b for those elements deemed important for TOP's)

EOP-011-1 Requirement R1

1.1. Roles and responsibilities ~~to activate~~ for activating the ~~Emergency~~ Operating Plan;

1.2. ~~Strategies~~ Processes to prepare for and mitigate Emergencies including~~, at a minimum~~:

1.2.1. Notification to the Reliability Coordinator, to include current and projected ~~System~~ conditions, when experiencing an operating Emergency;

~~**1.2.2.** Voltage control;~~

1.2.2. Cancellation or recall of transmission and generation outages;

1.2.3. ~~System~~ Transmission system reconfiguration;

1.2.4. Redispatch of generation;

1.2.5. Provisions for ~~Operator~~ operator-controlled manual Load shedding ~~plan coordinated to minimize~~ that minimizes the ~~use of~~ overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency; and

1.2.6. ~~Mitigation of~~ Reliability impacts of extreme weather conditions.~~; and~~

EOP-011-1 Requirement R1

- ~~**1.3.** Strategies for coordinating Emergency Operating Plans with impacted Transmission Operators and impacted Balancing Authorities.~~

EOP-011-1 Requirement R2

R2. Each Balancing Authority shall develop, maintain and implement a Reliability Coordinator-~~approved~~reviewed ~~Emergency~~ Operating Plan to mitigate Capacity Emergencies and Energy Emergencies. ~~At a minimum, the~~ The ~~Emergency~~ Operating Plan shall include the following, as applicable~~elements~~: *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations, Operations Planning, Long-term Planning]*

2.1. Roles and responsibilities ~~to activate~~ for activating the ~~Emergency~~ Operating Plan;

2.2. Processes to prepare for and mitigate Emergencies including:

2.2.1. Notification to the Reliability Coordinator, to include current and projected ~~System~~ conditions~~,~~ when experiencing a Capacity Emergency or Energy Emergency;

EOP-011-1 Requirement R2

2.2.2. ~~Criteria to declare~~ Requesting an Energy Emergency Alert, per Attachment 1;

~~**2.4.** Strategies to prepare for and mitigate Emergencies including, at a minimum:~~

2.2.3. Managing generating resources in its Balancing Authority Area to address:

2.2.3.1. capability and availability;

2.2.3.2. fuel supply and inventory concerns;

2.2.3.3. fuel switching capabilities;

2.2.3.4. environmental constraints.

2.2.4. ~~Voluntary~~ Public Appeals for voluntary Load reductions;

~~**2.4.3.** Public appeals;~~

2.2.5. Requests to government agencies to implement their programs to achieve necessary energy reductions;

EOP-011-1 Requirement R2

2.2.6. Reduction of internal utility energy use;

~~**2.4.6.** Customer fuel switching;~~

2.2.7. Use of Interruptible Load, curtailable Load and demand response;

2.2.8. Provisions for operator-controlled manual Load shedding ~~plan coordinated to~~ that minimizes the ~~use of~~ overlap with automatic Load shedding~~;~~ and are capable of being implemented in a timeframe adequate for mitigating the Emergency; and

2.2.9. ~~Mitigation of~~ Reliability impacts of extreme weather conditions.

~~**2.5.** Strategies for coordinating Emergency Operating Plans with impacted Balancing Authorities and impacted Transmission Operators.~~

EOP-011-1 Requirement R3

R3. ~~Each~~ The Reliability Coordinator, ~~shall approve or disapprove, with stated reasons for disapproval, Emergency Operating Plans submitted by Transmission Operators and Balancing Authorities~~ within 30 calendar days of receipt, ~~submittal.~~ shall review each Operating Plan to mitigate operating Emergencies submitted by a Transmission Operator or a Balancing Authority regarding any reliability risks that are identified between Operating Plans: *[Violation Risk Factor: High~~Medium~~] [Time Horizon: Operations Planning]*

3.1. The Reliability Coordinator shall:

3.1.1. Review each submitted Operating Plan on the basis of compatibility and inter-dependency with other Balancing Authorities' and Transmission Operators' Operating Plans;

EOP-011-1 Requirement R3

3.1.2. Review each submitted Operating Plan for coordination to avoid risk to Wide Area reliability; and

3.1.3. Notify each Balancing Authority and Transmission Operator of the results.

EOP-011-1 Requirement R4

R4. Each Transmission Operator and Balancing Authority shall address any reliability risks identified by its Reliability Coordinator pursuant to Requirement R3 and resubmit its Operating Plan to its Reliability Coordinator within a time period specified by its Reliability Coordinator. *[Violation Risk Factor: High] [Time Horizon: Operation Planning]*

EOP-011-1 Requirement R5

~~**R4.**~~ **R5.** Each Reliability Coordinator that receives an Emergency notification from a Transmission Operator or Balancing Authority shall notify, ~~as soon as practical~~ within 30 minutes from the time of receiving notification, other ~~impacted Reliability Coordinators~~ Balancing Authorities and Transmission Operators in its Reliability Coordinator Area, and neighboring Reliability Coordinators.
[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]

EOP-011-1 Requirement R6

~~**R5.**~~ **R6.** Each Reliability Coordinator that has a Balancing Authority experiencing a potential or actual Energy Emergency within its Reliability Coordinator Area shall ~~initiate~~ declare an Energy Emergency Alert, as detailed in Attachment 1. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*

Attachment 1-EOP-011-1

Energy Emergency Alerts

Introduction

This Attachment provides the process and descriptions of the levels used by the Reliability Coordinator in which it communicates the condition of a Balancing Authority which is experiencing an Energy Emergency.

EOP-011-1 Attachment 1

A. General Responsibilities

1. **Initiation by Reliability Coordinator.** An Energy Emergency Alert (EEA) may be initiated only by a Reliability Coordinator at 1) the Reliability Coordinator's own request, or 2) upon the request of an energy deficient Balancing Authority.
2. Notification. A Reliability Coordinator who declares an EEA shall notify all Balancing Authorities and Transmission Operators in its Reliability Coordinator Area. The Reliability Coordinator shall also notify all adjacent Reliability Coordinator

EOP-011-1 Attachment 1

B. EEA Levels

Introduction

To ensure that all Reliability Coordinator s clearly understand potential and actual Energy Emergencies in the Interconnection, NERC has established three levels of EEAs. The Reliability Coordinator s will use these terms when communicating Energy Emergencies to each other. An EEA is an Emergency procedure, not a daily operating practice, and is not intended as an alternative to compliance with NERC Reliability Standards. The Reliability Coordinator may declare whatever alert level is necessary, and need not proceed through the alerts sequentially.

EOP-011-1 Attachment 1

1. **EEA 1 — All available generation resources in use.**
   Circumstances:
   - The Balancing Authority is experiencing conditions where all available generation resources are committed to meet firm Load, firm transactions, and reserve commitments, and is concerned about sustaining its required Contingency Reserves.
   - Non-firm wholesale energy sales (other than those that are recallable to meet reserve requirements) have been curtailed.

EOP-011-1 Attachment 1

2. EEA 2 — Load management procedures in effect.

Circumstances:

- The Balancing Authority is no longer able to provide its expected energy requirements and is an energy deficient Balancing Authority.
- An energy deficient Balancing Authority has implemented its Operating Plan to mitigate Emergencies.
- An energy deficient Balancing Authority is still able to maintain minimum Contingency Reserve requirements.

EOP-011-1 Attachment 1

During EEA 2, Reliability Coordinators and energy deficient Balancing Authorities have the following responsibilities:

2.1 **Notifying other** Balancing Authorities **and market participants**. The energy deficient Balancing Authority shall communicate its needs to other Balancing Authorities and market participants. Upon request from the energy deficient Balancing Authority, the respective Reliability Coordinator shall post the declaration of the alert level, along with the name of the energy deficient Balancing Authority on the RCIS website.

EOP-011-1 Attachment 1

2.2 Declaration period. The energy deficient Balancing Authority shall update its Reliability Coordinator of the situation at a minimum of every hour until the EEA 2 is terminated. The Reliability Coordinator shall update the energy deficiency information posted on the RCIS website as changes occur and pass this information on to the impacted Reliability Coordinators, Balancing Authorities and Transmission Operators**.**

2.3 Sharing information on resource availability. The Reliability Coordinator of a Balancing Authority with available resources shall coordinate, as appropriate, with the Reliability Coordinator that has an energy deficient Balancing Authority.

EOP-011-1 Attachment 1

2.4 Evaluating and mitigating Transmission limitations. The Reliability Coordinator shall review Transmission outages and work with the Transmission Operator to see if it's possible to return any Transmission Elements that may relieve the loading on System Operating Limits (SOLs) or Interconnection Reliability Operating Limits (IROLs).

2.5 Requesting Balancing Authority actions. Before requesting an EEA 3, the energy deficient Balancing Authority must make use of all available resources; this includes, but is not limited to:

2.5.1. All available generation units are on line. All generation capable of being on line in the time frame of the Emergency is on line.

2.5.2. Demand-Side Management. Activate Demand-Side Management within provisions of any applicable agreements.

EOP-011-1 Attachment 1

3. **EEA 3 —Firm Load interruption is imminent or in progress.**

   Circumstances:

   - The energy deficient Balancing Authority is unable to meet minimum Contingency Reserve requirements.

EOP-011-1 Attachment 1

During EEA 3, Reliability Coordinators and Balancing Authorities have the following responsibilities:

3.1 Continue actions from EEA 2. The Reliability Coordinator s and the energy deficient Balancing Authority shall continue to take all actions initiated during EEA 2.

3.2 Declaration Period. The Balancing Authority shall update its Reliability Coordinator of the situation at a minimum of every hour until the EEA 3 is terminated. The Reliability Coordinator shall update the energy deficiency information posted on the RCIS website as changes occur and pass this information on to the impacted Reliability Coordinator s, Balancing Authorities, and Transmission Operators.

EOP-011-1 Attachment 1

3.3 Reevaluating and revising SOLs and IROLs. The Reliability Coordinator shall evaluate the risks of revising SOLs and IROLs for the possibility of delivery of energy to the energy deficient Balancing Authority. Reevaluation of SOLs and IROLs shall be coordinated with other Reliability Coordinator s and only with the agreement of the Transmission Operator whose Transmission Owner (TO) equipment would be affected. SOLs and IROLs shall only be revised as long as an EEA 3 condition exists, or as allowed by the Transmission Operator whose equipment is at risk. The following are minimum requirements that must be met before SOLs or IROLs are revised:

3.3.1. Energy deficient Balancing Authority obligations. The energy deficient Balancing Authority, upon notification from its Reliability Coordinator of the situation, it will immediately take whatever actions are necessary to mitigate any undue risk to the Interconnection. These actions may include Load shedding.

EOP-011-1 Attachment 1

3.4 Returning to pre-Emergency conditions. Whenever energy is made available to an energy deficient Balancing Authority such that the Systems can be returned to its pre-Emergency SOLs or IROLs condition, the energy deficient Balancing Authority shall request the Reliability Coordinator to downgrade the alert level.

3.4.1. Notification of other parties. Upon notification from the energy deficient Balancing Authority that an alert has been downgraded, the Reliability Coordinator shall notify the impacted Reliability Coordinator s (via the RCIS), Balancing Authorities and Transmission Operators that its Systems can be returned to its normal limits.

EOP-011-1 Attachment 1

Alert 0 - Termination. When the energy deficient Balancing Authority is able to meet its Load and Operating Reserve requirements, it shall request its Reliability Coordinator to terminate the EEA**.**

0.1 Notification. The Reliability Coordinator shall notify all other Reliability Coordinator s via the RCIS of the termination. The Reliability Coordinator shall also notify the impacted Balancing Authorities and Transmission Operators.

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Glossary of Terms Used in Reliability Standards
Functional Model
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VSL Matrix

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NERC Reliabilit
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persons who a
the North American bulk power system; transparent to the public; demonstrates the consensus for each standard; fairly balances the interests of all stakeholders; provides for reasonable notice and opportunity for comment; and enables the development of standards in a timely manner. NERC's ANSI-accredited standards development process is defined in the Standard Processes Manual and guided by reliability and market interface principles.

NERC Reliability Standards define the reliability requirements for planning and operating the North American bulk power system and are developed using a results-based approach that focuses on performance, risk management, and entity capabilities. The Reliability Functional Model defines the functions that need to be performed to ensure the Bulk Electric System operates reliably and is the foundation upon which the Reliability Standards are based.

The Standards Committee (SC) oversees and prioritizes NERC's standards development activities. The Standards Committee also coordinates NERC's development of Reliability Standards with the North American Energy Standards Board's (NAESB) wholesale electric business practices. Standards drafting teams, which are made up of industry volunteers and supported by NERC staff, work collaboratively to develop requirements using results-based

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Questions and Answers