

## Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

### Description of Current Draft

This is the first draft of the proposed standard for an informal comment period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	January 25, 2023
SAR posted for comment	June 22, 2022 – July 21, 2022

Anticipated Actions	Date
16-day informal comment period	September 13, 2023 – September 28, 2023
45-day formal or informal comment period with ballot	November 2023 – January 2024
XX-day formal or informal comment period with additional ballot	TBD
XX-day final ballot	TBD
Board adoption	TBD

## **New or Modified Term(s) Used in NERC Reliability Standards**

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

### **Term(s):**

**Energy Reliability Assessment (ERA)**: Evaluation of the resources that supply electrical energy and ancillary services for the BPS to reliably meet the expected demand during the associated time period. ERAs account for impact of actions that occur in each iteration on all subsequent iterations, including the depletion and replenishment of finite upstream resources (e.g., fuel).

**Near-Term Operational Planning Energy Reliability Assessment (OPERA)**: An Energy Reliability Assessment (ERA) performed for a short period of time (e.g., no more than six weeks), starting in the current operating day or next day, to be defined by the entity performing the study based on regionally specific requirements.

**Study Period**: The time period between the start and end of an Energy Reliability Assessment, typically assigned start and end dates, but can be more general for longer lead-time studies.

**Study Frequency**: The time period between when Energy Reliability Assessments are performed. This can be a prescribed number of days/weeks/months/etc. (e.g., every Monday or every month).

**Study Temporal Resolution**: The duration of or between each time step modeled in a study. The temporal resolution is the degree of detail with respect to time.

## A. Introduction

1. **Title:** Energy Reliability Assessments
2. **Number:** TOP-0XX-X
3. **Purpose:**
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1. Balancing Authority
    - 4.1.2. Reliability Coordinator

## B. Requirements and Measures

- R1. Each Balancing Authority shall develop, document, and maintain a Reliability Coordinator-reviewed Near-Term Operations Planning Energy Reliability Assessments (OPERA) process. The Near-Term OPERA shall:
  - 1.1. Have a documented Near-Term OPERA Study Frequency, Study Duration, and Study Temporal Resolution with a corresponding rationale for each selection.
    - 1.1.1. The Near-Term OPERA study period will begin within 48 hours following the completion of each assessment.
    - 1.1.2. The maximum Study Frequency will be set such that the time period covered by the current assessment must extend into the time period covered by the future/prompt and assessment and will be performed at least monthly.
    - 1.1.3. The maximum Study Temporal Resolution must be 1 hour.
    - 1.1.4. The Study Duration shall be no less than 7 days.
  - 1.2. The Near-Term OPERA shall use a base case that includes:
    - 1.2.1. Expected demand including demand side management and demand response;
    - 1.2.2. Expected generator capability considering known constraints (e.g., availability and flexibility, fuel supply and inventory concerns, fuel switching capabilities, and environmental constraints ;
    - 1.2.3. Expected transmission usage and coordinated and agreed upon transfers;
    - 1.2.4. Expected generation and transmission outages; and

**1.2.5. Expected energy storage capability**

- R2.** Each Balancing Authority shall develop, document, and maintain a set of Reliability Coordinator-reviewed Near-Term OPERA scenarios or a method of scenario development.
- 2.1.** The Near-Term OPERA scenarios developed shall include:
- 2.1.1.** The scenarios listed in Table 1; and
- 2.1.2.** Scenarios with a likely risk of occurring within the horizon which may include seasonally appropriate historical events, generation specific fuel or energy contingency scenarios, and weather events that are projected in the Near-Term OPERA horizon.
- 2.2.** All Near-Term OPERA scenarios developed in R2.1 shall have documented criteria which specify when implementing an Operating Process is required.
- R3.** The Balancing Authority shall submit for review the Near-Term OPERA process and scenarios to the Reliability Coordinator annually on a mutually-agreed upon schedule. [Violation Risk Factor: ] [Time Horizon: Operations Planning]
- R4.** Within 30 calendar days of receipt, the Reliability Coordinator shall:
- 4.1.** Review each submitted Near-Term OPERA process and scenarios on the basis of compatibility with other Balancing Authorities' Near-Term OPERA process and scenarios;
- 4.2.** Review each submitted Near-Term OPERA process and scenarios for coordination to avoid risks to Wide Area reliability; and
- 4.3.** Notify each Balancing Authority of the results of its review, specifying any time frame for resubmittal of its Near-Term OPERA process and scenarios if revisions are identified.
- R5.** Each Balancing Authority shall address any reliability risks identified by its Reliability Coordinator pursuant to Requirement R4 and resubmit its Operating Process(s) and scenarios to its Reliability Coordinator within 30 calendar days of receipt.
- R6.** Each Balancing Authority shall perform Near-Term OPERA according to processes documented in R1 and scenarios documented in R2.
- 6.1.** The Balancing Authority shall notify its Reliability Coordinator within 24 hours when Near-Term OPERA results require the implementation of an Operating Process(es).
- 6.2.** Results of the Near-Term OPERA and scenarios shall be provided to the Reliability Coordinator upon request.
- R7.** Each Balancing Authority shall develop and maintain one or more Reliability Coordinator-reviewed Operating Process(s) to mitigate forecasted Energy Emergencies within its Balancing Authority Area. The Operating Process(s) shall

include the following, as applicable: [Violation Risk Factor: ] [Time Horizon: Operations Planning, Long-term Planning]

**7.1.** Roles and responsibilities for activating the Operating Process(s);

**7.2.** Processes to reduce the probability of forecasted Emergencies including but not limited to:

- Updated frequency of performing a Near-Term OPERA to monitor if an Energy Emergency Alert continues to be forecasted or forecasted conditions worsen;
- Notification to its Reliability Coordinator, to include the conditions for the forecasted Energy Emergency;
- Identify when to request an Energy Emergency Alert.;
- Managing generating resources in its Balancing Authority Area to address:
  - capability and availability;
  - fuel supply and inventory concerns;
  - fuel switching capabilities; and
  - environmental constraints.
- Public appeals for voluntary Load reductions;
- Requests to government agencies to implement their programs to achieve necessary energy reductions;
- Reduction of internal utility energy use;
- Use of Interruptible Load, curtailable Load and demand response;

**7.2.1.** Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency; or

**7.2.2.** Provisions to determine reliability impacts of:

- cold weather conditions; and
- extreme weather conditions.

**R8.** The Balancing Authority shall submit for review the Operating Process(s) to mitigate operating Emergencies to the Reliability Coordinator annually on a mutually agreed-upon schedule. [Violation Risk Factor: ] [Time Horizon: Operations Planning]

**R9.** Within 30 calendar days of receipt, the Reliability Coordinator shall:

**9.1.** Review each submitted Operating Process(s) on the basis of compatibility with other Balancing Authorities' Operating Process(s);

- 9.2.** Notify each Balancing Authority of the results of its review, specifying any time frame for resubmittal of its Operating Process(s) if revisions are identified.
- R10.** Each Balancing Authority shall address any reliability risks identified by its Reliability Coordinator pursuant to Requirement R7 and resubmit its Operating Process (s) to its Reliability Coordinator within 30 calendar days of receipt.
- R11.** Each Balancing Authority shall implement one or more Reliability Coordinator-reviewed Operating Process(s) when a Near-Term OPERA forecasts an Energy Emergency Alert according to Table 1 or as specified for scenarios provided to the Reliability Coordinator according to R2.
- R12.** Each Reliability Coordinator that receives a forecasted Emergency notification from a Balancing Authority within its Reliability Coordinator Area shall notify, within 24 hours from the time of receiving notification, other Balancing Authorities and Transmission Operators in its Reliability Coordinator Area, and neighboring Reliability Coordinators. [Violation Risk Factor: ] [Time Horizon: Operations Planning]

Table 1. Near-Term OPERA Scenarios

Scenario	Demand Forecast	Contingency Event	If EEA 2 <sup>5</sup> is forecasted, Operating Process(s) is Required	If EEA 3 <sup>5</sup> is forecasted, Operating Process(s) is Required
Base Case	Normal System Forecast	None	Yes	Yes
High Demand	High Demand Forecast <sup>4</sup>	None	Yes	Yes
Base Case with Energy Contingency	Normal System Forecast	Loss of the largest single energy supply resource from the base case for the duration of the study period <sup>1</sup> .	No	Yes
High Demand with Energy Contingency	High Demand Forecast <sup>4</sup>	Loss of the largest single energy supply resource from the base case for the duration of the study period <sup>2</sup> .	No	Yes
Base Case with Fuel Contingency	Base Case Forecast	Fuel supply interruption that results in the loss of at least 50% of the largest subset of supply resources sharing a common fuel supply <sup>3</sup> (i.e., all generators on a specific segment of a pipeline or multiple stations with a common fuel source) for the duration of the study period.	No	Yes
High Demand with Fuel Contingency	High Demand Forecast <sup>4</sup>	Fuel supply interruption that results in the loss of at least 50% of the largest subset of supply	No	Yes

<sup>1</sup> This can be a generator or a transmission facility that results in the loss of supply. This is not a widespread outage of multiple resources due to a common extreme weather event.

<sup>2</sup> This can be a generator or a transmission facility that results in the loss of supply. This is not a widespread outage of multiple resources due to a common extreme weather event.

<sup>3</sup> Generators with common fuel supply are all generators on a specific segment of a pipeline or multiple stations with a common fuel source. The fuel source should include pipelines, suppliers of consumable fuels, and variable sources like solar and wind energy.

<sup>4</sup> High demand forecast should be coupled with the associated weather, but leaving solar and wind as modeled in the base case. Examples include 90:10 weather and load forecast or similar weather and load forecast error scenario.

<sup>5</sup> Energy Emergency Alert conditions are defined in EOP-011 Attachment 1.

		resources sharing a common fuel supply <sup>3</sup> for the duration of the study period.		
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