

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Response to Comments – Draft 2

NERC Project 2022-03 Energy Assurance with
Energy-Constrained Resources

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RELIABILITY | RESILIENCE | SECURITY



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Introduction

NERC Project 2022-03 Energy Assurance with Energy-Constrained Resources drafting team (DT) is addressing energy assurance. This project will enhance reliability by requiring entities to perform energy reliability assessments to evaluate energy assurance and when predefined criteria are not met, develop Corrective Action Plan(s), Operating Plans, or other mitigating actions to address identified risks. Energy reliability assessments evaluate energy assurance across the operations time horizons by analyzing the expected resource mix availability (flexibility) and the expected availability of fuel during the study period.

There were 64 sets of responses, including comments from approximately 161 different people from approximately 99 companies representing 10 of the Industry Segments.

Additional information is available on the [project page](#).

Background

Based on industry feedback, the DT modified the ERA definition, developed a new Near-term ERA definition to try to clear up confusion throughout the requirements, removed administrative burdens, updated language to provide flexibility, and removed subjective type language throughout the requirements.

Response to Comments Document Layout

The DT will be responding to all comments in a summary response report. Each chapter covers topics identified throughout the comments received (e.g., Applicability, Definition, Administrative, Requirements, etc.). Comments received are outlined at a high level in each chapter followed by the drafting team's response on how it considered the comment and the outcome of how the comment was addressed. If you have any questions, please contact Standards Developer, Jordan Mallory (Jordan.mallory@nerc.net).

Thank You

The drafting team thanks industry for your time in reviewing the proposed BAL-007-1 standard and providing comments and proposals for the drafting team's consideration. All comments received have been reviewed and discussed. Response to comments have been drafted in a summary response.

Standards Redundancy

TOP-002, TOP-003, and EOP-011

Industry Comment

Many industry commenters were concerned as to why the drafting team (DT) did not use existing standards, such as, TOP-002, TOP-003, and EOP-011 to address the scope of the project. Commenters continued to voice that Operating Plans seem to be the same Operating Plans generated from TOP-002. Some commenters expressed the duplicative nature of requirements from BAL-007 that seem similar to other reliability standards.

Drafting Team Response:

The Operational Planning Analyses and the Operating Plans performed and developed in TOP-002 are different than the Energy Reliability Assessments and Operating Plans proposed in BAL-007-1. TOP-002 is the standard for performing current- and next-day capacity assessments with minimal consideration for the energy required from fuel generation resources. Likewise, TOP-003 ensures that the Transmission Operator and Balancing Authority have the data needed for analysis but does not cover the actions needed for an ERA. Also, EOP-011 addresses the effects of operating emergencies in real-time but does not cover the actions needed for an ERA. In terms of performing assessments/analyses, ERAs are fairly similar to traditional capacity assessments, however they better represent the evolving resource mix and will grow in importance over the next many years.

Two items to consider between next-day assessments and ERAs are (1) the inclusion of the impacts of limited fuel supplies which leads to (2) the need for a longer time horizon. The specifics of each will be determined based mostly on the resource mix in each Balancing Authority Area.

TOP-002 covers today and tomorrow. BAL-007-1 extends that outlook to the next several weeks. Within the requirements of BAL-007-1, modeling limited supplies of fuel (including the variability of wind and solar irradiance in addition to fossil fuels) or planned fuel deliveries is necessary to fully examine forecasted conditions. It is imperative to model the performance of resources based on their actual ability to operate, not just simply their existence and status. Regional differences (specifically in what resource types are present in each BA) will drive what specific information is required, which is why it cannot be prescribed in the standard but must be determined by the entity performing the assessment. Longer time horizons (up to several weeks) may be necessary to account for fuel supply or the intentional utilization of electric storage within an area depending more on variable energy resources.

Operating Plans are where the real differences are between the two standards, and why longer time horizons can be most beneficial. BAL-007-1 actions are intended to complement and reduce the severity of TOP-002 and EOP-011 actions. TOP-002 Operating Plans are fairly limited in scope due to the time required to implement specific actions. Typically, TOP-002 Operating Plans call for actions from bringing online more generation to more extreme steps like voltage reductions, the depletion of required Operating Reserves, or the shedding of firm load. ERA Operating Plans will mostly take place further in advance but likely won't be as potentially extreme in nature. While they may have some of the same actions, once they're happening in real-time or near-real-time, operators have moved to TOP-002 or EOP-011 space. One example of actions that would be included in BAL-007-1 Operating Plans include expanded communication with regulators, neighboring areas, and the general public. This allows for those who will be impacted to be better prepared, leading to a more resilient recovery or potentially even being able to provide energy support when it would otherwise be unavailable. More targeted actions that would only be available to an entity performing an ERA would be the recall of long-recall-time outages, replenishment of stored fuels, better optimization of the use of existing stored fuels, and enhanced conservation efforts before experiencing more extreme conditions. The standard does not tell an entity how to complete its Operating Plans. The standard provides the requirements of what needs to be included in the Operating Plans. Some comments have been received over the course of this project asking if an entity could use its TOP-002 or EOP-011 plans. If you, as an entity, choose to update those Operating Plans to include BAL-007-1 information, that is up to the entity on how it is completed. The DT recognizes that entities

can come to the same conclusion in many different ways and the standard does not preclude how an entity meets the requirements of a standard.

Fundamentally, TOP-002 could be reorganized to include the energy risks being addressed by BAL-007-1. But as of today, TOP-002 doesn't require the energy considerations at the same level as BAL-007-1 and to draw a clear line between traditional capacity assessments and true energy assessments warrants a new standard that makes that distinction clear. Otherwise, TOP-002 is a shift in philosophies, not just wording.

BAL-007-1 Applicable Entity

Energy Reliability Assessments (ERA)

Industry Comment

Some commenters expressed that the BA, as identified in the current draft of BAL-007-1, is the wrong functional entity to address resources adequacy. The Resource Planner, as defined in the NERC ROP and NERC Glossary of Terms Used in the Reliability Standards, is the most appropriate functional entity to conduct ERAs. Arguably, the Resource Planner generally focuses on resource adequacy on “a long-term (generally [emphasis added] one year and beyond) plan for the resource adequacy of specific loads (customer demand and energy requirements) within a Planning Authority area”, but not for a short-term plan. It is the Resource Planner’s responsibility to “[Coordinate] with Transmission Planners, Transmission Service Providers, Reliability Coordinators, and Planning Coordinators on resource adequacy plans” (see NERC Functional Model). BAs are not typically staffed with planners who are familiar with assessing resource adequacy, and they rely on assessments from Resource Planners, Transmission Planners, and the Load-Serving Entities to develop their Operating Plans regarding such things as energy capacity and fuel availability.

Drafting Team Response:

The drafting team (DT) insists that Balancing Authorities are the best suited entities to perform Near-Term Energy Reliability Assessments. The assessments that have been accepted as the clear path forward differ from the current spectrum of existing assessments, and therefore don’t have a clearly defined responsible entity. It could be argued that very few entities have relevant experience in performing ERAs. The need is new and caused by the evolving resource mix, not something that would have been necessary just a few years ago.

The information and understanding of the resources that are included in a Near-Term ERA are most similar in nature to the current responsibilities of the BAs. This information includes generator capabilities and outage schedules, demand forecasts, and the expected transfers of energy between BAs. The BA is also responsible for the next-day planning and the operation of that same system, therefore the consequences of unacceptable results, an ERA performance will become the responsibility of the BA in the space of TOP-002. The Resource Planner, when evaluating conditions that are beyond a year, may be appropriate for longer term ERAs, but would be expected to lack the expertise of near-term aspects of this specific ERA. The BA would have a better understanding than an RP on items such as load forecasts vs load assumptions, outage schedules vs outage plans, and the volume of conditions that go into the assumptions made for interchange assumptions. While the base concepts may be similar in nature, the forecasts that provide input to a Near-Term ERAs are much more similar to the forecasts that initialize a next-day assessment than the assumptions that are used for longer term assessments. There will be a learning curve for whatever entity is responsible for ERA design and performance, but the learning curve will be most gradual for BAs.

Definitions

Energy Reliability Assessments (ERA)

Industry Comment

Many commenters expressed that a word appeared to be missing in the ERA definition. It was recommended to add the word “necessary” to the definition.

Drafting Team Response:

The drafting team (DT) updated the ERA definition. See updated definition below.

Energy Reliability Assessment (ERA) – Evaluation of the resources necessary to reliably supply the Electrical Energy required to serve Demand and to provide Operating Reserves for the Bulk Power System throughout the associated evaluation period.

Industry Comment:

Some commenters expressed the ERA definition applies under all the time horizons.

Drafting Team Response:

The drafting team agrees that the definition applies to all time horizons. To be more specific to near-term ERAs, an additional definition for “Near-Term Energy Reliability Assessment” was created. The additional details will help to set apart general ERAs from this specific type of ERA.

Requirement R1

Time Horizons

Industry Comment

Some commenters expressed that the “near-term time horizon” confuses this term with “Near-Term Planning Horizon” and “Near-Term Transmission Planning Horizon” that many entities are familiar with and are used in other NERC Standards.

Drafting Team Response:

The Drafting Team (DT) updated Requirement R1 to remove the near-term time horizon confusion.

Industry Comment

Some commenters expressed that the same ERA definition applies under all the time horizons.

Drafting Team Response:

The drafting team agrees that the definition applies to all time horizons. To be more specific to near-term ERAs, an additional definition for “Near-Term Energy Reliability Assessment” was created. The additional details will help to set apart general ERAs from this specific type of ERA.

Depletion of Fuel

Industry Comment

Many commenters expressed “Depletion of fuel” is overly prescriptive and one-sided (fails to consider replenishment) whereas “fuel supply” allows for a broad consideration of all fuel supply factors without requiring the BA to maintain documentation specific to the depletion of fuel for each generating resource.

Drafting Team Response:

The DT updated “depletion of fuel” throughout BAL-007-1 based on feedback received in place of “fuel supply”.

Examples that should be in the Technical Rationale and the Standard

Industry Comment

Some commenters requested that the DT move “variable energy resources” and “electric storage” as examples to the Technical Rationale. It is misleading and incomplete for a standard to list a limited subset of resource technologies simply because they are “new.” There will be other technologies in the future. Examples are more appropriately located in the Technical Rationale.

Drafting Team Response:

The DT removed variable energy resources and electric storage from BAL-007-1 and updated the Technical Rationale accordingly.

Unplanned Generator Outage Language

Industry Comment

Some commenters requested the DT add “unplanned generator outages” to Part 1.3.2 as this language will encompass all reasons leading to “unplanned generator outages/de-rates” and not limit it to fuel supply alone.

Drafting Team Response:

The DT removed unplanned generator outages from the BAL-007-1. The prior draft included this requirement under the Scenarios defined in R2, however the current requirement under R1 to model “resource capabilities and operational limitations” allows for the BA to include unplanned outages. It also allows the BA to define their ERA such that unplanned outages are not included, so long as the BA documents that process.

Time Periods Unclear

Industry Comment

Some commenters requested clarification on the time period being assessed or the amount of time entities must spend performing the assessment. It is also unclear whether the language requires entities to begin a new ERA within two days of each operating day, or whether the language simply limits how far in the future the ERA may look.

Drafting Team Response:

The DT added a new proposed NERC Glossary of Term, “Near-term ERA.” The DT feels that with the creation of this definition, it removes any confusion on what defines a Near-term ERA along with what is required throughout the BAL-007-1 standard.

Known Resources

Industry Comment

Some commenters requested the DT add the word “known” to resource capabilities and operations in Part 1.3.2 to avoid any ambiguity.

Drafting Team Response:

The DT did not add the word “known” in front of resource capabilities as the team finds this to be clear as written.

Similar Subpart Requirements

Industry Comment

Some commenters requested the DT remove one of the subparts that come across as one item being captured under the same subpart. Some commenters requested the DT remove “Transmission constraints” subpart as it is covered in the “resource capabilities” subpart. Additionally, other commenters requested that the DT keep the “Transmission constraints” subpart and delete the “resource capabilities” subpart.

Drafting Team Response:

The DT determined that both subparts were needed. The capability of resources can exceed the ability of the transmission system to transfer that energy to load centers. Transmission limitations won’t change the resource capabilities besides the BAs ability to use the full output of generators or subsets of the generation fleet (e.g., export constrained areas restricting 1000 MW of generation to 800 MW, collectively). It is prudent to model resource and transmission constraints separately, as not all BAs will experience the latter.

Joint Work (E.g., RSG, WRAP, etc.)

Industry Comment

Some commenters expressed concern that BAL-007-1 R1 does not appear to allow BAs to collectively pool resources to produce regional or sub-regional ERAs. No flexibility or deference is given to Resource Planners and entities who elect to do these tasks under programs like the Western Resource Adequacy Program.

Drafting Team Response:

The DT updated the respective requirements to allow for BA to “individually or jointly with other Balancing Authorities,” work together as a collective group to complete the assessments required for BAL-007-1.

Requirements R2 through R3

Subjective language

Industry Comment

Many commenters expressed various subjective language throughout BAL-007-1. Below provides specific statements from entities:

- Requirement R2 uses the terms “credible” and “best” which are subjective and therefore not conducive to a measurable compliance assessment at audit. One entity recommends revising to eliminate reliance on these terms.
- Requirement R3 uses the term “minimize”, which can be subject to interpretation.

Drafting Team Response:

The DT updated Requirement R2 and R3 to remove the subjective terms (e.g., credible, best, minimize) and ensure the language is drafted clearly.

Historical Requirement

Industry Comment

Some commenters do not agree that it is necessary to include “or historical” within subpart 2.3 because the BA already has awareness of the historical risks within their BA region and those risk factors would be factored into their assessment of what is a credible risk.

Drafting Team Response:

The DT updated Requirement R2 to state: “that have a historical precedent of occurring, as defined by the Balancing Authority, based on the best information available at the time of Scenario development.” The team felt historical was important to be added into the subpart as parameters are needed, but it is solely up to the BA to determine which type of historical information is best.

Audit Concerns

Industry Comment

Some comments express that R2 is vague and ambiguous. It amounts to a fill-in-the-blank standard. This puts entities in a position where they create their own standard to be audited against. This creates a situation where many companies will choose to meet minimum compliance thresholds to not risk potential non-compliance. Entities who may want to put their best effort forward will be reluctant to do that because it will have a higher risk of non-compliance. R2 has no performance measurements associated with it specifying a required minimum level of performance. NERC Standards should be performance based, not administrative. Documentation of Scenarios, methods, and rationales will result in subjective enforcement. Enforcement staff will likely leverage the ability to audit based on the quality of their ERA, not their performance to improve reliability.

Drafting Team Response:

The DT redrafted Requirement R2 to address reliability and to ensure the requirement is clear in what is expected from an entity.

Requirements R4 through R7

Duplicative, Administrative Burden, and Cost-Effective Concern

Industry Comment

Many commenters expressed concern regarding the duplicative nature of requirements stated in BAL-007-1 that are redundant and overlap other standards such as TOP-002 and EOP-011 and are administrative in nature. There were many comments expressed concerning the cost, and the additional personnel that entities would need to hire to address these types of requirements. Below provides specific statements provided by entities:

- Requirement R5, as written, is vague and does not seem to provide value to reliability, particularly in the case of Operating Plans, many of which would be obsolete on a 24-month provision timeframe.
- Requirement R6 cites certain RC actions related to Requirement R5. Requirement R5 is an administrative requirement that simply obligates the BA to supply their near-term ERA process, Scenarios or methods and Operating Plan(s) at least once every 24 months. While Requirement R6 obligates the RC to review the R5 materials and notify each BA if revisions are needed to their ERA process, Scenarios or methods and Operating Plan(s) within 60 days. This is administrative and therefore should not have a VRF higher than Low.
- Eliminate BAL-007-1 requirements R3-R7 to remove duplication with EOP-011 requirements R2-R4. Since the goal of BAL-007-1 is to perform ERAs and provide the BA with more lead-time to address forecasted Energy Emergency Alerts (as defined in EOP-011, Attachment 1, Section B), it is unnecessary and duplicative for BAL-007-1 to include requirements addressing preparation for, and management of, emergencies because EOP-011 already covers this topic.

Drafting Team Response:

The DT removed Requirements R4 through R7 from BAL-007-1.

Requirements R8 through R10

Requirement R8

Industry Comment

Many commenters questioned why the Drafting Team elected to put the implementation of R1 as one of the last requirements. R8 should be combined with R2 or R3 as a performance requirement following the R1 requirement. Alternatively, R8 could be moved up to R3, and renumbering the current requirements R3 through R7.

Drafting Team Response

The DT combined R8 with R2 to read in sequential order.

EEA Language

Industry Comment

A variety of comments stated below regarding the EEA language in Requirement R9.

- This language seems to duplicate EOP-011.
- EEAs should be left for BAs to enter as currently defined. Issuing an EEA too far out will not carry much weight because circumstances will likely change the next day for a BA.
- R9 should be removed from BAL-007-1 as it reaches beyond the near-term scope of BAL-007-1 and falls within Real-time Operations, specifically EOP-011.
- The Requirement R9 (revised BAL-007-1 Draft 1 R8) now references the EOP-011 Attachment 1 Section B. EOP-011 Attachment 1 Section B also includes specific responsibilities in addition to the EEA Levels definitions. BC Hydro suggests that EEA Level Definitions are more appropriate in the NERC Glossary of Terms, and recommends against embedding requirements by reference to different Reliability Standards.

Drafting Team Response

It is important that EEAs remain in BAL-007-1. There are three EEA levels, two of which are associated with forecasted Energy Emergencies. The criteria for forecasted Energy Emergency apply also to Scenarios identified in Requirement 2. This level of granularity allows for the BA to design an Operating Plan that fits the specific situation. Some Scenarios may be expected to enter the lower levels of an Energy Emergency, and the actions in an Operating Plan should be appropriate for that combination.

Finally, by leveraging the existing terms used in EOP-011 for EEA, clear and well-understood definitions are already in place which require little to no training, beyond the advanced timing associated with BAL-007-1. BAs have existing interpretations of how they respond when nearing or entering an EEA and the existing interpretations are expected to be used, including those that involve interaction with Reserve Sharing Groups.

Below provides response to the variety of proposed options for placement of EEA.

1. EEA Definition – This project is slated as a high priority and is due by December 2024. Creating or moving current language into a definition historically takes more than one comment and ballot period to get it right. This project has gone through two comment and ballot periods and has one comment and ballot period left to meet its project objective. In addition, it would be a significant uplift to insert the EEA information from EOP-011 into a definition as it has a domino effect from the changes made and how the EOP-011 standard has been drafted. The team is not against something to this degree but does not feel it is the appropriate time to make this type of change within the development process and the stage of this project.
2. EEA information as an attachment to BAL-007-1 – There are many ways to address similar requirements within other standards. The team determined that keeping it within the BAL-007-1 pointing to EOP-011 is an

appropriate method and that any drafting team who updates EOP-011 is required to review other standards to ensure the changes do not impact what is required in the other standards associate.

Requirement R10

Industry Comment

Some commenters stated that “Requirement R10 lacks sufficient clarity to ensure that RC will not be needlessly burdened to report forecasted Energy Emergencies that do not pose imminent risk to BES reliability.”

Drafting Team Response

The DT updated Requirement R10 to be clear that the BA will maintain its respective documents and provide them to the RC every 24 calendar months. This should clear up confusion on there being a burden on the RC due to the requirements removed on the back and forth between the BA and RC. In this requirement it only requires the BA to provide information to the RC.

BAL-007-1 Implementation Plan and Cost Effectiveness

Implementation Plan

Industry Comment

Some entities requested the DT extend the time to comply with all requirements in BAL-007-1 or want to remove intermediate deadlines.

Proposal	Number Entities Supporting	Suggested Edits (Months from FERC Approval)	Total time
A	24	R1-R3 in 18 Months and R4-R10 in 24 Months	24 Months
B	14	24 Months for all requirements	24 Months
C	8	R1 in 12 Months, R4-R7 in 18 Months, and 24 Months for all requirements	24 Months
D	7	36 Months for all Requirements	36 Months

Drafting Team Response:

The DT updated the Implementation Plan by removing the phased-in requirements and BAL-007-1 will have an implementation timeframe of 24-months for all requirements.

With the removal of the administrative type requirements, the DT did not feel that 36-months had adequate justification for development, implementing, and maintaining of what is required in BAL-007-1.

Cost Effectiveness

Industry Comment

Many entities expressed concern regarding the cost to address the additional administrative type requirements added to BAL-007-1 and that additional resources would be needed to address these types of requirements.

Drafting Team Response:

The DT updated the respective requirements from BAL-007-1 to address the cost effectiveness concern of administrative burden.