



RELIABILITY FIRST

**ReliabilityFirst Standards Committee Agenda
12/7/2023 04:00 – 5:00 ET**

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1. Welcome, Attendance and Introductions
2. Review Anti-Trust Statement
3. Approve September 7, 2023 Draft Minutes
4. Review/Discuss Draft 2023 BAL-502-RF-03 FYR Poll/Comments
5. Discuss [Project 2022-03](#) Energy Assurance with Energy-Constrained Resource NERC Standards Authorization Request
6. Determine RF SC Recommendation for 2023 BAL-502-RF-03 (Reaffirm, Revise or Retire)
7. Next Steps
8. Action Items
9. Future Meetings

Antitrust Compliance Guidelines

It is the policy of ReliabilityFirst to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. It is the responsibility of every ReliabilityFirst participant to adhere to ReliabilityFirst's Antitrust Compliance Guidelines, a copy of which is available on ReliabilityFirst's website. If there are any questions, please contact me. Please also be advised that this meeting is public, and that the notice of this meeting was posted on the ReliabilityFirst website and publicly announced. Participants should keep in mind that the listening audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation of industry stakeholders.



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**Draft ReliabilityFirst Standards Committee Minutes
07/27/2023 12:00 – 1:00 ET**

**ReliabilityFirst Standards Committee Minutes
09/7/2023 09:00 – 10:00 ET**

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Member	Company	Sector	Term (Years)
Tim Kucey*	PSEG	Transmission	3.0 – 06/20/26
Ryan Kelley (Vice-Chair)*	Duke	Transmission	1.5 – 12/20/24
Ryan Strom*	Buckeye Power	Small LSE	3.0 – 06/20/26
Vacant	Vacant	Small LSE	1.5 – 12/20/24
Rick Blumenstock*	Consumers	Medium LSE	3.0 – 06/20/26
Vacant	Vacant	Medium LSE	1.5 – 12/20/24
Beverly Laios*	AEP	Large LSE	3.0 – 06/20/26
Dan Gacek*	Exelon	Large LSE	1.5 – 12/20/24
Nick Poluch (Chair)*	Talen	Supplier	3.0 – 06/20/26
Vacant	Vacant	Supplier	1.5 – 12/20/24
Bobbi Welch*	MISO	RTO	3.0 – 06/20/26
Patricio Rocha Garrido*	PJM	RTO	1.5 – 12/20/24
Anthony Jablonski*	RF Staff		

* Denotes in Attendance

1. Welcome, Attendance and Introductions

- a. Tony and Nick welcomed the team and attendance was taken. A quorum of the SC was established.

2. Review Anti-Trust Statement

- a. Tony reviewed the Anti-Trust Statement.

3. Approve July 27, 2023 Draft Minutes

- a. **Motion:** Approve July 27, 2023 Draft Minutes
- b. **Moved:** Nick Poluch
- c. **Second:** Rick Blumenstock
- d. **Discussion:** None
- e. **Vote:** Motion carried

4. Review/Discuss Draft 2023 BAL-502-RF-03 FYR Announcement

- a. **Discussion:** Tony and the SC reviewed the draft 2023 BAL-502-RF-03 FYR Announcement. Tony gave a high-level review on how the posting will occur and outreach mechanisms. It was suggested that the announcement be made during the upcoming Tech Talk along with Compliance newsletter.

There was discussion surrounding activity surrounding resource adequacy at the NERC ERATF level along with MISO and PJM. The SC determined the comment period should be increased from 15 days to 30 days.

5. Review/Discuss Draft BAL-502-RF-03 FYR Comment Question

- a. **Discussion:** Tony and the SC reviewed the draft BAL-502-RF-03 FYR Comment Question. A question was asked about the RF Ballot Body and Tony noted we will need to re-establish it based on the outcome of the FYR comment period. Tony also talked about how a potential Standards Authorization Request (SAR) is established depending on the comment period feedback.
- b. **Motion:** Approve Draft 2023 BAL-502-RF-03 FYR Announcement (with 30-Day comment) and Draft BAL-502-RF-03 FYR Comment Question,
- c. **Moved:** Nick Poluch
- d. **Second:** Dan Gacek
- e. **Discussion:** None
- f. **Vote:** Motion carried

6. Next Steps

- a. Tony will work with internal RF Communications staff to initiate the 30-day posting.

7. Action Items

- a. Check with internal RF Compliance Monitoring staff to see if there is an RSAW for the BAL-502-RF-03 Standard – Tony Jablonski

8. Future Meetings

Tony will request availability for the next SC meeting which will occur shortly following the close of the 30-day FYR comment period.



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Please enter your First and Last Name	Please Enter Your Company Name	Do you believe the Standard should be reaffirmed, revised or retired?	If you believe the standard should be revised or retired, please provide specific reasons you believe the BAL-502-RF-03 Standard should be revised or retired.
Johnny Gest	ReliabilityFirst	Revise	<p>The ReliabilityFirst Engineering & System Performance group strongly recommends revisions to BAL-502-RF-3 to address the following:</p> <p>Require additional demand scenarios beyond a median¹ forecast of peak Net Internal Demand</p> <p>Rationale: With the recent occurrence of extreme weather events (e.g., 2014 Polar Vortex, 2018 Cold Snap, Winter Storm Uri, and Winter Storm Elliot) that combine the impacts of both wide-area generation unavailability along with increased demand, it has become customary within industry to evaluate both the median (50/50) forecast and an extreme² forecast of peak Net Internal Demand. This provides better insight to resource adequacy risks with the comparison of resource performance against varying levels of anticipated demand. This type of analysis is presently performed in the NERC Summer Reliability Assessment, NERC Winter Reliability Assessment, RF Summer Reliability Assessment, RF Winter Reliability Assessment, etc. In addition, FERC release Order No. 896 to address challenges associated with planning for extreme heat and cold weather events that occur during periods of high demand³.</p> <p>Require the analysis of resource unavailability for all hours within a specified period of time</p> <p>Rationale: The ReliabilityFirst footprint is presently in the midst of a change related to its existing generation resource mix. Retirements associated with conventional resources (i.e., Coal) have been on a steady increase and replaced mainly with solar, wind, and energy storage resources. Due to the reduction in available dispatchable resources and the variability of inverter-based resources, there are emergent challenges with maintaining adequate resources during day-to-day off-peak demand periods. In order to adequately assess this risk, evaluation of hourly resource adequacy can identify the ability to reliably serve Net Internal Demand for a given year.</p> <p>Consideration of probabilistic methods to develop study scenarios that enhance the identification and mitigation of resource adequacy risk</p>

Rationale: “A probabilistic study uses a range of inputs, often sampled from a distribution of inputs or historical data, to produce a distribution of results instead of the single result in the deterministic case. The results of a probabilistic study have both a magnitude of impact and a likelihood of occurrence.”⁴ Combining both deterministic and probabilistic methods can help better understand risk and develop possible mitigations. For example, determining a range of potential generation dispatch scenarios and selecting one of those scenarios for study in a deterministic analysis.

Consideration of language that includes more robust controls regarding verification and validation of load projection used.

Rational: Accurate load projections are a key component to providing analysis for a 1 day in 10 criteria. The Planning Coordinator needs a way to trust but verify that the load projections are in line with previous submittals. Verification efforts should provide insight of anomalous changes that could result in large data center load additions, Distributed Energy Resource penetration, extreme heat and cold weather events, etc.

Overall, the NERC March 2023 ERATF White Paper, Considerations for Performing an Energy Reliability Assessment provides additional context to justify the recommendations related to BAL-502-RF-3.

Ed Berry Alcoa, APGI- Reaffirm
AGC Warrick



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Donald Lock	Talen Energy	Revise	<p>The goal of BAL-502-RF-03, Planning Resource Adequacy Analysis, is to have Planning Coordinators (PCs) establish “one day in ten years” loss of Load expectation (LOLE) principles. PJM is the principal PC in RF’s area (the other is MISO), and they issued earlier this year the resource adequacy study at https://www.pjm.com/-/media/library/reports-notices/special-reports/2023/energy-transition-in-pjm-resource-retirements-replacements-and-risks.ashx. It says that beginning with the 2026/27 Delivery Year, “The projected total capacity from generating resources would not meet projected peak loads, thus requiring the deployment of demand response,” i.e. dropping load.</p> <p>The task facing the ReliabilityFirst Standards Committee is therefore that of deciding what happens next if a PC’s resource adequacy analysis is a “Fail,” i.e. predicting loss of load far more often than one day in ten years. The answer is presently “Nothing.” R3 of BAL-502-RF says that PCs must identify such gaps, but there is no subsequent requirement for a corrective action plan. Those responsible for BES reliability can’t just predict that disaster will strike; they must take action to prevent this from occurring.</p> <p>Changes to the standard:</p> <ol style="list-style-type: none">1. Add as R4 of BAL-502-RF, “The Planning Coordinator shall develop a corrective action plan to address any gaps identified in the Requirement R3 analysis.” CAPs are the normal means of addressing deficiencies found via performing NERC studies, tests etc, and PJM is already moving on this subject - https://www.pjm.com/-/media/committees-groups/cifp-ra/2023/20230621/20230621-item-02a---pjm-cifp-stage-3-proposal---updated.ashx.2. Make the subsections of R1.4 more comprehensive, as shown below:<ol style="list-style-type: none">1.4.1 Availability and deliverability of fuel, including the impact of natural gas pipeline compression and storage facility outages.1.4.2 Common mode outages that affect resource availability, including loss of wind and ice storms for wind farms and snow/ice coverage for solar facilities.Explanation – Common mode failures can cause the minimum dependable output of renewables to be near zero. PJM and MISO may lack authority to make these facilities more reliable, but they must be able to predict the impact of having almost all of them go out of service simultaneously.1.4.6 Impacts of extreme weather/drought conditions that affect unit
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availability, including identifying the probability and likely effect of worst-case winter storm temperature/wind combinations

Explanation - The PJM action plan cited above proposes to, “Explicitly model how forced outages and other de-rates vary with temperature.” A dry bulb temperature (DBT)-only approach is not working and in fact cannot get the job done, however, because freeze-ups of conventional generation units do not track the DBT; they correlate to the heat transfer rate, which is dominated by wind speed. The information PJM and MISO need to collect to construct an accurate predictive model is as follows:

- Lowest DBT and, separately, WCT successfully handled to-date for each generation unit, looking back to 1/1/2000 (the start date used by NERC in EOP-012)
- Heat tracing/insulation design DBT and wind speed values, and resultant WCT, for each conventional generation unit
- Minimum design DBT for renewables (freezing of water is not an issue here)
- Any known precipitation vulnerabilities, e.g. wind turbine blades icing-up in ice storms exceeding 0.25”/hr, CTG inlet air filters clogging at snowfall rates exceeding 1”/hr

1.4.7 Modeling assumptions for emergency operation procedures used to make reserves available, including the effects of putting generation units on-line early when severe winter storms are impending.

Explanation – This is the best, easiest method of enhancing BES reliability during winter storms, especially for extreme cold that follows drenching rain that can soak insulation and reduce its effectiveness

Caitlin Chavez	City of Lansing by its Board of Water and Light	Reaffirm
Ed Berry	APGI-AGC Warrick (Alcoa)	Reaffirm
Ed Berry	APGI-AGC Warrick (Alcoa)	Reaffirm
Brian Flinspach	Scrubgrass Reclamation Company	Reaffirm
Adrian Raducea	DTE Electric	Reaffirm



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Elizabeth Davis	PJM Interconnection	Revise	<p>PJM has reviewed BAL-502-RF-03 and has determined the best approach is to revise the existing Standard for the following reasons:</p> <ol style="list-style-type: none">1. PJM finds that the reliability metric is not future-proof and requests clarification of what “1 day in 10 years” means due to multiple areas assigning different meanings to “1 day in 10 years”. And to calculate the loss of load hours (LOLH) and expected unserved energy (EUE) when the system has a planning reserve margin that meets the 1 day in 10 years criteria. This is needed as the transition to a different fuel mix has made the potential loss of load events more heterogeneous (some events can be shorter and impact few MWhs while others can be longer and impact more MWhs). This would mean the granularity of the study required by the standard should be hourly (i.e., all 8760 hours of year should be studied)<ol style="list-style-type: none">a. Additional focus on probabilistic analysis is taking place at the RAS and PAWG, therefor, maintaining and revising the Standard ensures an accurate RMR calculation.2. PJM finds that emerging regulation negates the need for regional efforts that will be superseded/short-lived and once the energy standard gets created and the industry has experience with it, a reconsideration should be considered in keeping BAL-502-RF-03 as an active Regional Standard.3. The Standard should not include requirements to perform analysis beyond a 5-year period. It is too speculative to perform analysis for such a time horizon and results could lead to misleading conclusions.
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Bobbi Welch	MISO	Retire	<p>MISO arguments in support of retirement:</p> <ol style="list-style-type: none"> 1. Reliability metric is not future-proof – With the transformation of the electricity sector – shaped by a changing resource mix, more frequent extreme weather events, and increasing electrification – the industry is experiencing increasing challenges in ensuring sufficient resources during shifting risk periods and the analysis of Resource Adequacy, as assessed by BAL-502-RF-03, has not kept pace. The regional standard, BAL-502-RF-03 is based on a “one day in ten-year” loss of Load criteria, or Loss of Load Expectation (LOLE) metric, which quantifies the frequency of risk periods on a daily basis. In contrast, the industry is considering moving to a more comprehensive metric, Expected Unserved Energy (EUE), that quantifies the magnitude, duration, and frequency of risk periods on an hourly basis. 2. Inability to keep pace with future shifts in risk - Moreover, as the resource portfolio continues to evolve, a LOLE-based Planning Reserve Margin (PRM) based on gross peak hour risk is less effective in addressing periods of risk that emerge outside of the gross peak hour since it only looks at the gross peak hour and doesn’t measure the extent of which we are serving load. Additionally, the LOLE objective considers the “peak hour for all days” throughout the year, ignoring that the industry is generally moving from annual to seasonal analysis. 3. Duplicative of other regulations and studies – MISO’s resource adequacy construct and processes are governed by MISO’s Tariff, Module E which lays out the mandatory Resource Adequacy Requirements (RAR) that MISO must meet to ensure resource adequacy within its footprint. The deliverables required under Module E are more comprehensive than what is currently required under BAL-502-RF-03. Therefore, if BAL-502-RF-03 were retired, MISO would still be required to determine an appropriate PRM using LOLE analysis. <p>In addition, MISO would continue to actively participate in NERC’s Winter and Summer Seasonal Reliability Assessments and Long-Term Reliability Assessment (LTRA), assessing and reporting on the overall reliability, adequacy, and associated risks that could impact the upcoming summer and winter seasons and long-term (10-year) horizon.</p> <ol style="list-style-type: none"> 4. Stifles creativity – BAL-502-RF-03 limits what MISO can do in terms of its resource adequacy construct (i.e., methodology, metrics, adequate reliability levels, etc.) as MISO must meet BAL-502-RF-03 requirements as it modernizes its approach under Module E. For example, MISO recently modified its Tariff to establish a seasonal resource adequacy construct whereby resource accreditation more accurately reflects the availability of a resource during each season. MISO would like to do more; however, the pace and extent to which MISO can modify its resource adequacy construct, is limited by the parameters of BAL-502-RF-03. 5. Emerging regulation negates the need for regional efforts that will be
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superseded/short-lived – Currently, NERC is working on a footprint-wide standard, Project 2022-03: Energy Reliability Assessment with Energy-Constrained Resources, that will require entities to perform energy reliability assessments. Energy reliability assessments will evaluate energy assurance across the Long-Term Planning horizon by analyzing expected resource mix availability (flexibility) and expected fuel availability during the study period. Corrective Action Plan(s) will be required to address identified risks. Therefore, it is inefficient to develop a regional standard in parallel with a national standard intended to address the same risk.

If BAL-502-RF-03 is not retired, it needs to be revised (at a minimum) to address the issues above.

Annual Review - To keep current with dynamic changes in the environment and to assess for continued need, MISO recommends BAL-502-RF-03 be reviewed annually as opposed to once every five years.

Reference: MISO Tariff, Module E-1, section 68A.2 and 68A.2.1