CLEAN ENERGY ORGANIZATION COMMENTS AND PROPOSAL
RR #554 (RESOURCE ADEQUACY PERFORMANCE BASED ACCREDITATION FOR CONVENTIONAL RESOURCES)

SUBMITTER INFORMATION

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RR OBJECTIVES (FROM RR FORMS)

What is the objective of this RR?

Describe the objective and end result

Per the original RR 554 submission: "*Current accreditation methodologies for conventional resources consist of one hour performance testing of the resources on an annual basis (for the operational test) and a more stringent one-hour capability test (while maintaining a four-hour continuous availability requirement) every five (5) years. The current methodology does not consider past performance (i.e. outages) or availability and generally closely aligns with the nameplate of the conventional resource. The objective of this RR is implement performance based accreditation methodology, to better align capacity accreditation to the capacity value provided by conventional resources starting with the 2025 Summer Season.*"

The current proposed PBA accreditation methodology for thermal resources does not capture correlated outage risk, such as we have seen during recent winter storms. Clean Energy Organizations remain concerned that the proposed policies and tariff language do not result in comparable treatment with the current or proposed accreditation methodologies for wind and solar resources. We suggest that comparable treatment of all resource types should be a principal objective, and reasonably capturing correlated outage risk is a crucial element of achieving that objective and ensuring reliability. To that end we include in these comments a proposal for a modification of the EFORd calculation that we believe will be a reasonably close approximation to a thermal resource ELCC if it were calculated.

How RR addresses the objectives:

Describe how this RR addresses or solves the objectives

Per the original RR 554 submission: "*This RR meets the objective for implementing the performance based accreditation policy paper as approved by the SPP Board of Directors, Regional State Committee, and additional SPP working groups and committees in 2022. This RR also addresses, at least partially, the IRATF Resource Planning & Availability 2.1 & 2.2 initiatives to identify the appropriate accreditation of all resources.*"

SUBMITTER COMMENTS

The Natural Resources Defense Council, Sustainable FERC Project, Sierra Club, and Earthjustice (collectively "Clean Energy Organizations"), appreciate the opportunity to provide these additional comments suggesting a modified EFORd approach to the proposed accreditation methodology for conventional resources (Revision Request 554).

We continue to agree with the stated goal of RR 554 to better align resource accreditation of conventional resources with the capacity value these resources can reasonably be expected to provide. This capacity value is, in general, intended to measure a resource's likelihood of being available during periods of tight supply and when the system needs capacity the most. However, Clean Energy Organizations and the SPP MMU have continued to highlight that the parallel PBA (for conventional resources) and ELCC (for wind, solar, and battery storage resources) accreditation methodologies do not result in comparable treatment. Effective capacity accreditation requires a level playing field. Anything else will increase consumer costs, implicitly subsidize or penalize particular technologies, provide incorrect price signals for efficient market entry and exit, and potentially threaten grid reliability.

One key area of concern we have raised is that PBA is based on an EFORd approach that is not equivalent to the ELCC methodology:

- Because of how it is calculated, ELCC effectively evaluates resources based entirely on their performance during simulated loss of load events (or near-loss of load events), which is 1-day-in-10 years, or about 2 hours every ten years. This equates roughly to the most-risky 0.002% of hours in a given period.[1]
- EFORd, in contrast, is based on a generator's "demand hours," or when it is expected to generate. For peaking resources this could be several hundred hours per year and for more economic resources this could be several thousand.

We agree with the MMU that ELCC consistently applied for all resources would be the best path forward. However, recognizing the increased effort and modeling challenges, and in the spirit of the instruction sent by REAL to the SAWG to consider modifications to the PBA calculation, we offer the following proposed changes to PBA that we believe would make conventional resource accreditation reasonably comparable to ELCC. Although our proposed approach would not be identical to ELCC accreditation, we believe it is sufficiently comparable in treatment to ELCC to warrant approval by FERC.

In preparing this proposal, we sought to identify an accreditation methodology that accomplished two distinct purposes simultaneously, both of which we understand to be fundamental goals of the SAWG and of SPP more broadly in developing an accreditation regime. First, the accreditation methodology should give system planners accurate and predictable information regarding the capacity accreditation of their existing generation

[1] ELCC is calculated based on a resource's ability to avoid a loss of load event, which occurs once every ten years (1-day-in-10-years LOLE) in a resource adequacy system. If a loss of load event is, on average, two hours in duration, that equates to two hours every 10 years, or 2 out of 87,600 hours (0.002%). Note that in a system with high penetration of energy storage, a resource could reduce loss of load probability even if it was not available immediately during the tight supply conditions because storage could shift the energy to other periods.

resources, so that they can plan for the lowest-cost future that ensures reliability at a 1-in-10-year LOLE standard. And second, the methodology should provide a price signal to individual generators that encourages those resources to make investments or operational changes needed to maximize their availability during the highest-risk hours of the year.

To accomplish those parallel but interrelated goals, we propose a two-step accreditation process in line with that proposed for renewable resources under RR568: first, conventional resources would be evaluated on a class-wide based on their forced outage rates (EFOR) during the highest-risk hours of the year (a measurement we are calling EFORr, as detailed below); and second, this class-wide accredited capacity would be allocated to individual generators within that class based on a weighted average of their EFORd' and their EFORr. This two-step metric would ensure that overall accreditation of conventional resources is based specifically on when the system is most at risk of supply shortfalls, specifically addressing concerns about correlated outages due to fuel supply and weather conditions and considering risk periods that may occur outside of peak demand (like periods of high maintenance). It would also maintain a sufficiently large data set of hours, for resource classes, to avoid undue volatility in accreditation values for individual generators.

The following Attachment A provides a detailed summary of the proposal, although we acknowledge it leaves some details in need of resolution. We appreciate SAWG's work on capacity accreditation reform and look forward to discussing this potential alternative to the current proposed PBA accreditation methodology at the next SAWG meeting.

Respectfully submitted,

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Attachment A: Proposed Modified EFORd Approach for PBA Capacity Accreditation Methodology

- Determination of Class-wide Accreditation using EFORr: We suggest accrediting the overall classes of PBA resources (i.e., gas, coal, etc.)[2] using a modified UCAP and EFORd based methodology, which we have provisionally labeled "EFORr":
  - EFORd' – Equivalent Forced Outage Rate (demand) – the average forced outage rate of a resource during demand periods (or a measure of the probability that a generating unit will not be available due to forced outages or forced deratings when there is demand on the unit to generate)[3]
  - EFORr – Equivalent Forced Outage Rate (risk hours) – the average forced outage rate of a resource during "high-risk hours" (or a measure of the probability that a generating unit will not be available due to forced outages or forced deratings during hours of greatest risk and tightest supply margin)
    - Defining "high-risk hours" is important here: we propose that they be defined as the top 1% of tightest hours in a given season (summer or winter), where the gap between net load and available generation is the smallest. This would equate to 88 hours per year (44 per season). (MMU has proposed "evaluating resources during the top 3 percent of intervals where the margin between available capacity and net peak load obligation was the tightest.")
    - Alternatively, the top 2% or top 3% of tightest intervals could be considered, in line with the MMU's suggestion.
    - Class-Wide Accredited Capacity = ∑ demonstrated net generating capability * (1 - EFORr) (Same general formula as included in PBA proposal today)
  - This approach is similar to proposals being considered or used by SPP's neighbors, such as MISO's proposed Direct Loss of Load (DLOL) approach based on availability during Loss of Load and tight margin hours and ERCOT's performance credit mechanism.

- Allocation of Class-wide Accreditation to Individual Resources using EFORd' and EFORr: After calculating a class-wide total accredited value, SPP could then allocate that value to individual resources using a weighted average approach between EFORd' and EFORr, which would hold individual resources accountable for their performance during high-risk hours, but reduce the volatility of that signal (and provide better certainty to system planners) by combining it with the EFORd' measure of resources' overall performance.
  - Individual Resource Available Capacity = demonstrated net generating capacity * [1-(EFORd' * Y% +EFORr * Z%)]
  - Accredited Capacity = Class-wide Accredited Capacity * Individual Resource Available Capacity/Class-wide ∑ Individual Resource Available Capacity
  - Note here that Y + Z must always equal 100. The SAWG could simply weigh each of these at 50%, or use a different split such as 60%/40%. We believe this question would merit further discussion, and perhaps some numerical analysis.

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[2] SAWG could consider further differentiating classes of PBA resources, specifically to address location and fuel security. For example, the accreditation of gas resources split into more than one class based on (1) SPP Load Zone, and (2) whether or not dual fuel capability is available. This would ensure that gas resources in colder climates (LRZ1) with dual fuel capability, for example, receive a class-wide accreditation different than gas resources in warmer climates (LRZ6) without duel fuel capability.

[3] This is based on the currently defined EFORd' methodology that SPP has proposed for use in PBA.