SPP Southwest Power Pool

CLEAN ENERGY ORGANIZATION COMMENTS REGARDING RR #554 (RESOURCE ADEQUACY PERFORMANCE BASED ACCREDITATION FOR CONVENTIONAL RESOURCES) AND RR #568 (EFFECTIVE LOAD CARRYING CAPABILITY ACCREDITATION FOR WIND, SOLAR AND STORAGE)

SUBMITTER INFORMATION

Date: May 23, 2023

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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.*"

Per the original RR 568 submission: *"The intent of this RR is to file revisions to the Tariff to implement the policy that was previously approved by the SPP Board of Directors and the Regional State Committee for the ELCC methodology for wind and solar resources but rejected by the Federal Energy Regulatory Commission ("FERC"). These proposed Tariff revisions are also indented to address that concerns stated by FERC in its rejection of the previous filing at FERC, as well as reflect the language that presented to FERC to address requests for additional information. Originally, the ELCC methodology for energy storage resources ("ESR") approved policy did not have any proposed Tariff language changes, but the goal of this RR is to propose similar Tariff revisions used for the ELCC methodology for wind and solar."*

The current accreditation methodology for thermal resources does not capture correlated outage risk, such as we have seen during recent winter storms. Accreditation for thermal resources is also not probabilistic. For these primary reasons, Clean Energy Organizations argue 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.

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."*

Per the original RR 568 submission: "*The RR implements to the previously approved requirements for wind, solar and storage into the SPP Planning Criteria, SPP Business Practices, and Attachment AA of the SPP Tariff.*"

SUBMITTER COMMENTS

The Natural Resources Defense Council, Sustainable FERC Project, Sierra Club, and Earthjustice (collectively "Clean Energy Organizations"), appreciate the opportunity to provide both additional comments on the proposed revisions to the accreditation methodology for conventional resources (Revision Request 554), and new comments on the proposed revisions to the ELCC methodology for wind, solar, and energy storage resources (Revision Request 568). We submit these comments relative to both revision requests as our concerns related to both and how the two proposals are part of SPP's whole resource adequacy construct and must work together.

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. However, we do not believe SPP's current proposals to evaluate thermal resources based on a basic EFORd calculation (RR554), and simultaneously evaluate wind, solar, and storage resources using an advanced ELCC methodology (RR568), are reasonable. In our previous comments on RR 554, we highlighted our concern that the revisions will not result in comparable treatment for capacity accreditation of thermal resources and nonthermal resources. SPP's newly posted proposed revisions in RR 568 do not fix this fundamental disconnect; in some cases, proposing to take back to the Commission the same concepts that were criticized by Commissioners in the first submission. We look forward to discussing these concerns going forward; and we also include some clarifying questions in these comments and request that SPP staff address them at a future SAWG discussion of RR 554 and/or 568.

<u>Proposed EFORd Accreditation Methodology:</u>

1. Correlated Outage Risk:

In our previous comments discussing RR 554, we explained the importance of selecting an accreditation methodology that accurately captures the risk of correlated outages. Those

comments remain applicable today**.** Fundamentally, SPP needs to implement a way to account for thermal correlated outages, and to assess thermal performance during high-risk hours (which may arise in part from correlated outages), because it otherwise runs a significant risk of mis-accrediting thermal resources. This is problematic for a few distinct reasons. First, an EFORd-based accreditation regime provides no incentive for individual generators to improve their availability during high-risk periods (such as through winterization, dual fuel contracts, or efforts to obtain a more firm fuel supply).

Second, failing to account for correlated outages also provides inaccurate information to utilities, state regulators, and SPP about the reliability contributions of thermal resources. As we also explained in our last set of comments, thermal units receiving capacity accreditation entirely based on their EFORd rates that perform poorly during extreme events will likely be accredited at a higher rate than they deserve because the EFORd analysis does not consider that under extreme weather conditions or other high-risk periods, the odds of forced outages for many thermal resources also increases. This over-accreditation of thermal resources will necessarily result in one of two outcomes. First, if SPP makes the same mistake of failing to adequately consider correlated high-risk period thermal outages in its LOLE model, then it will likely see system disruptions at a higher rate than 0.1 outage day per year, particularly during the types of major weather disruptions that have led to system crunches (and correlated outages) in the past decade. Evidence suggests that the risk of extreme weather is only increasing. Alternatively, if SPP does not make the same mistake in its LOLE, and implements modeling changes to account for the possibility of correlated outages, which we do not believe it has yet done, then the model will inevitably ensure a reliable system only by securing more overall capacity. In such a system, resources (like wind, solar, and storage) that are appropriately accredited based on their actual contributions to resource adequacy will be squeezed out, constituting a smaller share of the total capacity supply than their contributions warrant. While such an outcome would preserve the reliability of SPP's system, it would come at the costs of deeply inequitable treatment of different resources; and higher charges to customers across the region by moving the market away from cheap and clean energy sources.

In our last comments on RR 554, we urged SPP to work with stakeholders to determine a method of capturing correlated outage risk. Failure to do so, while implementing ELCC for wind, solar, and storage resources, results in an overall scheme that is unduly discriminatory, and unjust and unreasonable. We look forward to discussing this issue more in upcoming SAWG meetings; but as fodder for that discussion, we note that there are in fact different ways to accomplish this. The most obvious method, and the one most analogous to SPP's proposal for wind, solar, and storage resources, is of course simply conducting an ELCC analysis for thermal resources following roughly the same procedures as discussed in RR 568. We are aware that this has already been discussed and was not taken up by the SAWG membership at the May SAWG. But it is nonetheless worth revisiting, because a universal ELCC analysis using an LOLE model that factors in the possibility of correlated outages is far and away the cleanest way to move towards equitable treatment of all resource times; and with SPP already conducting this analysis for nonthermal units it would be a natural step to expand it to thermal fleets. We do note that ELCC analysis that is based solely on EFORd assumptions for thermal resource availability, still will not account for correlated outage risk of these resource classes. Thus, we urge SPP to look at additional LOLE modeling adjustments to address correlated outage risk, as discussed further below.

If SPP does not move forward with an ELCC methodology, then it should consider alternatives that can still account for correlated outages and performance during high-risk periods. We suggested previously that SPP examine other RTOs' proposals; without endorsing any one proposal, we note that CAISO accredits resources using a "Slice of Day" method; and MISO is currently proposing to shift to an accreditation method, "Direct-LOL," that offers a simpler calculation focused on resource performance during high-risk periods.[1] Even if SPP feels constrained to an accreditation methodology resembling EFORd for thermal resources, SPP should at least consider modifications to the methodology that would account for reduced thermal performance during high risk hours and/or forced outages that occur simultaneously with other thermal resources. For instance, SPP staff could evaluate the possibility of limiting its EFORd analysis to historical thermal unit performance during high-risk periods, using the modified calculation (based on a limited hour set) that it has already developed for resources with less than 100 service hours in a season.[2] We look forward to discussing any alternative offered by SPP staff and supported by the SAWG membership that more accurately evaluates all resources' contribution to system stability than a simple EFORd calculation.

1. High-Risk Hours (Hours of Need) versus Accreditation Methodologies:

We also note that EFORd based accreditation does not result in accrediting thermal resources based on the same hours as ELCC accreditation. ELCC based accreditation is focused on resource availability during the hours with highest risk of loss of load, whereas EFORd is based on all hours, including those with and those without loss of load risk. Similarly, the resource adequacy requirement in SPP is based upon the selection of the most vulnerable periods for the SPP BA, yet accreditation values of the individual resources is based on a different timeframe, the vulnerable periods for individual LREs, which may or may not correspond to the SPP BA peak load periods. The resource adequacy construct, including all accreditation methodologies, and the determination of the planning resource margin requirement, should all be based on the same hours: those where the risk of losing load is the highest.

<u>Differential Treatment of Thermal and Nonthermal Resources</u>

The current proposal to accredit thermal resources based exclusively on an EFORd determination is also problematic because it differs fundamentally from the ELCC methodology SPP has presented in RR 568, which will determine accredited capacity values for wind, solar, and storage resources based on their direct impact on the amount of load that can be sustained consistent with the LOLE standard of 0.1 outage day per year (as measured by the LOLE Model). At the most basic level, ELCC is a probabilistic approach, where EFORd is not. SPP's continued work assessing the value of wind, solar, and storage resources based on their actual contribution to that standard accounts for the possibility that like resources are more likely to experience correlated down periods, especially for weather-related causes. This is a reasonable accreditation approach; but it is not reasonable to apply that approach only to some resource

[1]Resource Accreditation White Paper Version 1.0 - Draft May 2023, MISO, https://cdn.misoenergy.org/MISO%20Draft%20Resource%20Accreditation%20Design%20White%20Paper628865.pdf

[2] May 2023 SAWG Meeting, SPP Staff Presentation, *PBA (RR 554) Policy Concepts*, at 34.

types while continuing to accredit other types based on an average annualized measurement of their performance in all hours regardless of the risk in those hours. Nor is our concern about inequitable treatment merely theoretical: much of that same weather-related correlation occurs in the thermal fleet as well as for renewable and storage resources, but SPP's basic EFORd methodology accounts for neither correlated outages nor does it focus on performance during high-risk hours. The current proposed dichotomy of treatment between thermal and non-thermal resources is not defensible.

This dichotomous treatment of thermal and nonthermal resources is also evident in the allocation of capacity value to individual resources once a class-wide accreditation is determined using the ELCC analysis. SPP proposes to allocate the total accreditation for a given resource class among individual wind or solar resources based on their performance during the top three percent of Net Peak Load hours of the LRE they are serving. This means that wind or solar resources that are contributing the most during the highest peak hours, which we assume to also be hours with high risk of loss of load, will receive the highest accreditation values. Yet EFORd does not provide a similar value or incentive for thermal resources that provide higher amounts of capacity during high-risk hours. One obvious result of this allocation method is that wind and solar resources' accreditation will ultimately be determined in part by how other resources of the same type perform during their LREs' peak load periods and other high-risk hours. And of course, the ELCC analysis itself measures the net contribution of a given resource assuming all other existing resources are online and operational; so the performance of non-like resources will also have some influence on wind, solar, and storage. This interdependence of capacity contribution on other resources' performance does not exist under an EFORd regime because units are accredited entirely based on their own forced outage rate. And there is no defensible reason to allow only some resources' accreditation to be impacted by variation in the grid writ large.

Tiered Classifications for Wind, Solar, and Storage Resources

RR 568's continuation of the original proposed tiering of wind and solar resources is hard to justify from a policy perspective. For instance, SPP has failed to justify its selected thresholds for wind resources meeting the first 35% of a given LRE's Net Peak Load (or solar resources meeting the first 20% of Net Peak Load). In its response to FERC's first deficiency letter in ER22-379 noting the lack of justification for the 35% threshold for wind resources, SPP stated as follows:

> "[t]he 35% of nameplate point equates to an ELCC accreditation of approximately 21%. The majority of SPP stakeholders supported the idea of the Tier 1 threshold for wind resources. At the time SPP's ELCC whitepaper was approved, the majority of the LREs had not yet surpassed the 35% threshold of procured firm transmission service compared to their individual LRE's peak demand."

This does not explain why 35% is a reasonable threshold, instead merely suggesting that the number was generally agreeable to SPP members several years ago. Given the significant impacts of the Tier 1 threshold on the capacity accreditation of wind resources, SPP must determine this threshold based on evidence of how wind resources' contributions to resource adequacy actually changes at various levels of penetration. In the same response to FERC, SPP did have some evidence for the 20% threshold for solar resources, namely, that the average

ELCC value of solar begins to decline more steeply after 10,000 MW of solar is operational on the SPP system, and that this is approximately 20% of SPP's peak load. However, SPP offers no explanation for why 20% is relevant on an LRE-level, as each LRE may have a different daily or seasonal load profile from the system as a whole, or a different generation mix. The translation of a systemwide inflection point to the LRE-level renders the 20% threshold arbitrary.

SPP's decision to set these thresholds on a LRE basis rather than an SPP system basis is also problematic. The declining marginal ELCC of wind, solar, and energy storage relates to their penetration across SPP's entire system, not the penetration within a certain LRE's service area, or the even more arbitrary grouping of which LRE various resources are contracted to serve. By setting the tier thresholds based on a percentage of each LRE's Net Peak load, the capacity value of renewable energy and storage resources will be artificially capped when an individual LRE reaches the threshold, even if the overall SPP system remains far below the 20% or 35% thresholds. The only justification CEOs are aware of for this unreasonable approach is a desire by LREs to guarantee favorable accreditation treatment for the wind and solar capacity resources of each individual LRE, even if they lag in developing these. Such an approach systematically undervalues the capacity offered by wind and solar contracted for by early-mover LREs, to the detriment of consumers. We understand that such approach offers more certainty to LREs for existing (or near-term investments in) wind and solar resources which will maintain a more stable capacity value, but believe that these benefits are outweighed by the inefficiencies of artificially capping the capacity accredited to wind and solar resources. If SPP maintains the tiered approach to wind and solar accreditation, we urge SPP to consider allowing individual LRE's to capture the higher value of Tier 1 resources until that tier reaches 35% or 20% of SPP BA load. This would mean that early movers could have more than 35% or 20% of their load served by wind or solar included in Tier 1 until other LRE's and the full SPP BA also reach that level of wind and solar penetration.

<u>Questions and tariff comments relating to RR 568:</u>

1. In Section 15.4 of the RR, "Allocation to Individual ELCC Resources," SPP proposes allocating accredited capacity to individual wind and solar units based on their "average historical production output from the top three percent (3%) Net Peak Load hours of the SPP Balancing Authority Area's Load."[3] But different Balancing Areas will naturally reach their Net Peak Load at different times and on different days of the year, resulting in potentially very different accreditation for wind and solar resources depending on which LRE they are associated with. Can SPP explain the justification for this policy proposal, focusing on why basing allocation on performance during individual LREs' risk hours makes sense in an integrated footprint like that offered by SPP?

2. A related impact of accrediting resources based on individual LREs' risk hours is that a resource located in one LRE but attached to another LRE can have a far different value than identical nearby resources, even though it contributes exactly the same amount of capacity to the reliability of the SPP BA. For instance, a solar resource that has a value in the summer for the SPP BA peaking in the heat of the day may have zero accredited

[3] RR 568 at 31-32.

value if the resource is tied to an LRE that has a non-coincident peak at night. The result does not make sense in the context of the reliability of the SPP BA and it is unduly discriminatory. This has the potential to create significant complexity, causing unnecessary treatment discrimination between resources, without a discernible corresponding benefit. How does SPP plan to ensure an accreditation and resource adequacy construct that is internally consistent?

3. Relatedly, allocation of accredited capacity among storage units apparently does not depend on where those storage resources are located. Why was this distinction drawn between storage and wind and solar resources? Please describe the all the differences between the accreditation approaches for storage versus wind and solar resources, including any differences in the tariff language structure.

4. SPP proposes to allocate storage capacity on a tiered basis depending on whether those resources bid in to discharge on a 4, 6, or 8 hour timeframe.[4] What was SPP's basis for selecting those three categories of storage? In selecting those categories, what input did SPP staff seek or receive from the storage industry or regarding the relevance of these particular class definitions, whether "equipment parameters" are definitive of duration or resource adequacy contributions, or similar considerations?

5. The Business Practice edits section 2.0 Determination of System ELCC Example states "The ELCC Study will consist of analyses utilizing Loss of Load Expectation (LOLE) metrics to determine the capacity provided by the wind resources, solar resources or Energy Storage Resources. The LOLE metric used for the ELCC Study shall be a 1 day in 10 year (0.1 day/year)." How will the 0.1 day/year metric be divided to determine accreditation values in the winter and the summer? What analysis has been done to determine in which seasons and hours the risk of loss of load is the highest?

6. We are concerned with the proposed use of the term Net Peak Load. This term tends to be used in the industry today to mean peak load minus wind and solar generation at that time. SPP's proposed term in the definitions section has a different meaning, which may be confusing. We urge SPP to use a different term, possibly Actual Net Peak Demand versus Forecast Net Peak Demand.

Respectfully submitted,

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[4] RR 568 at 32-33.

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IN THE APPROPRIATE SECTIONS BELOW, PLEASE PROVIDE THE LANGUAGE FROM THE CURRENT RR SUBMISSION FORM FOR WHICH YOU ARE PROPOSING REVISION(S), WITH ALL EDITS REDLINED.

EFFECTIVE LOAD CARRYING CAPABILITY STUDY

No specific edits are included, but we recommend changes be made to the entire proposal as necessary to bring nonthermal resources in line with thermal resources.

ALLOCATION TO INDIVIDUAL ELCC RESOURCES

No specific edits are included, but we recommend changes be made to Section 15.4 to implement a more sensible allocation methodology.