
Executive Summary
On an annual basis, SPP performs a resource real-time availability evaluation. The results of the evaluation are compiled to report specific findings and recommendations to stakeholders for review and approval. Stakeholders may also analyze the report and make recommendations and/or recommend adjustments to the scope of the evaluation. The stakeholder review process includes the CAWG (primary), MWG, ORWG, SAWG, MOPC and RSC.

This 2022-2023 report is intended to:

- Show the availability of resources from a real-time operations perspective in comparison to what was accredited on such resources
- Show the difference between what was available to market and what was accredited by rolling granular settlement location data up to a per day level, based on the peak load interval
- Identify gaps, using all data, between SPP real-time operations and resource adequacy, and to recommend changes for approval by SPP stakeholder groups

Note: All data currently performed on peak load interval for associated day on market registered resources only

Total Accredited Capacity vs. Available vs. Obligation
Figure 1-4 below show the real-time availability on market registered accredited resources. Resources of Wind and Solar unit type are given availability equal to real-time output. Resources of non-Wind/Solar unit type are given availability equal to Economic Maximum submitted when not in outage. Resources of non-Wind/Solar unit type are given availability equal to real-time output when in outage. While reviewing the below, system operations would like to draw attention to the following two items: 1) Areas when the peak load is approaching, or is greater than, the available accredited generation and 2) The average availability in a given month vs. the peak load during the same month. System operations observation is that there are both daily instances where the accredited availability is barely able, or not sufficient, to cover the peak load, and also that the monthly average availability draws to near to the peak load in a few months.
**Figure 1** - Real-time Availability vs. Accredited vs. Peak Load – All Unit Types - 2022 1st Quarter

**Figure 2** - Real-time Availability vs. Accredited vs. Peak Load – All Unit Types – 2022 2nd Quarter
**Figure 3** - Real-time Availability vs. Accredited vs. Peak Load – All Unit Types – 2022 3rd Quarter (July & Aug) /2021 (September)

**Figure 4** - Real-time Availability vs. Accredited vs. Peak Load – All Unit Types – 2021 4th Quarter

**Remaining Accredited Capacity**

Figure 5 below shows the delta between the Real-time Availability on Accredited Market Registered Resources and the peak load obligation. Based on the below, December 23rd, 2022 showed insufficient accredited capacity on the peak load interval. This is however without considering non-market
registered capacity and external transactions in full totality of ~ 1900 MWs. If all of this capacity was fully capable and all transactions deliverable, this would cause the insufficiency to be solved with ~ 400 MWs of sufficiency. However, given December 23rd, 2022 was during winter storm Elliot when there was a large amount of resource unavailability, system operations believes that it is not practical to assume that all of this capacity would be available.

Figure 5 – Remaining Capacity - Availability on accredited Market Registered resources minus peak load

Unit Type Availability Analysis

Figure 6 - Real-time Availability vs. Accredited vs. Peak Load – Wind and Solar
Figure 6 above shows the real-time availability on accredited resources of Wind and Solar unit types. These unit types are given availability equal to real-time output regardless of outage status.

Accredited & Available Capacity - Non Wind & Solar

Figure 7 - Real-time Availability vs. Accredited vs. Peak Load – Non Wind/Solar

Figure 7 above shows the real-time availability on accredited resources of non-Wind and Solar unit types. These unit types are given availability equal to Economic Maximum submitted when not in outage and equal to real-time output when in outage.

Percent of Accredited Capacity Available - All Unit types

Figure 8 - Shows the Average, Minimum, and Maximum Available vs. Accredited by Quarter
Figure 8 shows the Maximum, Average, and Minimum percent of available to accredited capacity for market registered resources for each quarter.

**Conclusion**

There continues to be an observed delta between accredited capacity and what is actually available in real-time. This is to be expected based on current accreditation policies and should be mitigated by having a sufficient amount of excess Planning Reserve Margin (PRM). However, there have been time periods over the last 12 months where the total availability observed on accredited market registered resources is minimally adequate and even less than sufficient (December 23, 2022) in covering peak load obligation, without considering other operational limitation such as deliverability. Also there are frequent times throughout the year the BA must rely on non-accredited resources to cover the required load obligation.

Continued research between SPP resource adequacy and real-time operations information is needed to understand factors causing such availability short falls. **This research should be utilized to identify gaps between real-time operations and resource adequacy planning, and to reveal areas of potential improvement for stakeholder consideration.**

Focus points/Recommendations:

- Create assurance to SPP BA that Emergency Maximum is stable and available to utilize
- Continue to explore if real-time availability data may play a role in performance based accreditation methods in Resource Adequacy
- Continue to explore utilization and performance metrics of non-Market registered generation and other demand management items (i.e. BTM, DR, imports utilized in workbook submittals) given newly required data submission
- Identifying additional assessments useful in demonstrating effectiveness of SPP’s real-time operations and resource adequacy approaches and revealing where improvements may be beneficial