Notes from 10-6-22 RA Reform Workshop

NRDC started and discussed PRM calibration (see slides). It supports SCE’s PRM proposal with two modifications to NRDC’s previous proposal. This would include a single annual LOLE in lieu of monthly and use of a single annual PRM set at the highest load (probably September) month-day (with amendments). These would include adjusting 1( monthly PRM requirements, as needed, to assure that the monthly portfolio requirement for any “at risk” month is equivalent to the identified annual portfolio requirement, 2) setting the monthly portfolio requirement for non “at-risk” months at the annual PRM and 3) giving the Energy Division discretion to adjust the PRM for policy or other reasons. If you run an LOLE study and it shows a need for 3000 MW of perfect capacity that doesn’t exist, it would not be good to create an infeasible requirement. You might need a more specific PRM for each summer month.

NRDC also addressed standardized products. Given run-time limitations for thermal plants, differences in these limitations could result in many different products. NRDC proposes that products be binned into those with similar characteristics so that they can be transacted. Bins can be determined after review of data on thermal limitations.

LOLE should be redetermined and PRM recalculated annually. If there are resource gaps, they should be filled in conjunction with the IRP.

There was support for not creating infeasible requirements and some for facilitating transactability.

NRDC said doing multi-year forecasting should reduce surprises.

MRP presented next (see slides). It showed analysis to support selection of the worst days. It proposed an 80% exceedance value for solar in the summer and 60% the rest of the year. It said CAISO RA Enhancements should be pursued to eliminate RAAIM and improve outage replacement. There is insufficient record for UCAP. It is unsure about the treatment of imports in the MCC buckets and said ED should monitor imports in the test year.

The CAISO said it would not develop its own PRM and would use 2 values, one with no solar. PG&E asked the CAISO if it is changing how it looks at RA showings. The CAISO said this was not final; it needs to see the full portfolio. It will have its own stakeholder process.

CalWEA is concerned about the wind data set and translating it into exceedance. NRDC said for wind it is using model data, especially for “new” wind areas. Regarding the quantity of data, it cares about the tails in LOLE modeling. More data is not better unless it speaks to reliability events.

ED asked if bins could be used to reflect use limitations like run hour, energy and start limitations. It asked if NRDC wants that to be captured in the master data base. NRDC said there is a need to capture limitations in LOLE modeling; it is not sure how to do this for start limitations in SoD. It thought there should only be 3-4 types of thermal bins to assist trading. QC would not be rounded up and PRM would be calculated based on truncated amounts. Binning would reward generators with longer run times.

CalPA presented next (see slides). It proposed a 4-season wind exceedance approach for NP15 and SP-15. The goal is to minimize the absolute value of the sum of differences between average generation on worst days vs. exceedance. Its analysis produces higher capacity values than exceedance. A monthly analysis would be more accurate but the results are not very different from quarterly. It also found that there is minimal correlation between wind capacity and load. The CAISO asked if it looked at critical days by region? CalPA said if you base the analysis on extreme days, it would not be appropriate for the rest of the year.

CalWEA presented next (see slides). It compared wind QC from exceedance with its proposed ENLR. They correlate well January through April, diverge in May and June and correlate again in July and August. September results drop but there are few days with load over 85% exceedance. The relationship is stable again in November.

PG&E presented next (see slides). It proposed seasonal wind exceedance values at 70% June through September and 50% October through May. The slides explain the lower value in non-summer months. When asked how this would affect the SCE PRM proposal, PG&E said some presentations have different levels in different months and there will be shapes in the data bases. Whatever is selected will be used in the PRM analysis.

The CAISO presented next (see slides). It looked at stressed system days, i.e., with Flex Alerts or Emergencies. It compared solar production in those days to 70, 80, and 90% exceedance. 9/8/22 and 9/9/22 were stressed but weather in Southern California affected solar output. There were stressed days with output below 90% exceedance. Wind was more variable but also below 90% exceedance, especially in September. It showed that at HE19, solar production varies significant by the day of the month (it showed August) and by hour of the day. Use of a single monthly value will not capture this. A lower exceedance level will result in an increased PRM. PRM adjustments must also be made to cover storage charging needs. The CAISO raised various issues on its slide 11. NRDC pointed out that PRM is set in the peak month, not the peak hour and that there could be specific PRMs for different months. It also said one cannot assume that all resources are contracted in all months.

Astrape said regarding the CAISO’s slide 9 that if you changed the exceedance value you have the same resources and there is an issue of fungibility among the resource classes. CAISO responded that the relationship between PRM and exceedance is complicated. CESA asked what the CAISO’s intention was for the PRM for the test year and whether it had concerns about the test year and the CAISO said it is still working on this topic. MRP said highly stressed days are beyond RA metrics. Th CAISO said the model should reflect actual performance. Vistra said you can address operational risk in LOLE modeling.

The Energy Division presented next. It started with an update from the CEC on load forecasting. The CEC needs more time to refine and test its ability to allocate load in all hours for all LSEs. Astrape then presented updates and sensitivities. The 2024 IRP PSP results compared to 1-day in-10-year reliability show a shortfall of 4500 MW. If EFOR is included in modeling, it raises the PRM by 1%. Its modeling sees more risk in July compared to the CEC 1-in-2 forecast. Astrape’s stress tests are shown on slide 9. It used 70% exceedance. NRDC said it found support for monthly adjustments to the PRM and for using a 1-in-5 and a 1-in-10 load forecast. It asked if stress tests should be performed fur durability of results? Astrape said it has to run the results back through the simulator. Vista asked about the impact of not substituting capacity. Astrape said if you subtract planned maintenance in March the PRM must be higher. Vistra said the CAISO data show higher forced outages than Astrape’s 5% since planned outages that are not replaced are treated as forced.

Astrape said there is a need for 4.8 GW of more imports to meet a 1-in-10 reliability level. There are a lot of new resources in the 2022 baseline capacity compared to PSP capacity, an increase for 2024 of more than 5 GW, mostly batteries. It is still checking its results before posting them. It needs to include the new baseline in the LOLE study and to update wind shapes and hydro.

Clean Power Alliance (CPA) presented on a simplified showing tool (see slides). It has no optimization, instead using a logic test for sufficiency on an hourly basis and in aggregate. It looks at everything in aggregate and says you do not need to show at the hourly level. ED asked if CPA’s proposal was to add this logic to the SCE tool or to use this as a different tool. CPA said both. It can be used as an alternative compliance showing plus alternative logic for single cycle storage. ED asked to see a copy and CPA said it would provide the tool to the working group. ED asked about the storage charging change in the logic (slide 9) and whether CPA proposed to show excess in 1-4 hours? CPA said no. It sums the hourly position for all hours and compare that to the amount needed to charge. There is additional built-in logic for an energy sufficiency test. CAISO asked about modeling Pmin and well as Pmax and CPA said that should be added to its tool.

SVCE presented (see slides). It was concerned about import capability for out of state wind. It asked if deliverability assessments are done at an hourly level necessary to determine an LSE’s import capability. The output of wind exceeds the August NQC. How will this be transitioned for MIC for SoD? MRP asked how this was different from today and whether MIC is a limit to other hours of the day. SVCE asked if there was a need for different NQC for each hour since the imports often exceed the August NQC. ED said that if you used the maximum value, this would require a CAISO MIC stakeholder process. If you continue to use the peak value to send to CAISO to see if there are MIC changes, this could be an issue in the future. CAISO said import deliverability is required for the NQC amount. If we moved to a single maximum value for imports, this would require an NQC value that is protected under MIC. There might be a way to get in more imported resources.

Next there was general Q&A. CAISO was not sure why PG&E thought a 70% exceedance would handle variability in output. P&E said it did not see an easy way to address this issue rather than more conservative accounting. It is open to other suggestions. It asked CAISO about its showing of 90% exceedance which did not always work on high load days. CAISO said it had no recommendations. PG&E said for days when solar and wind output are less than 90%, these are all different days. Is there some inherent diversity value? It did not see a lot of correlation between wind and solar values. CAISO said there are days with both poor wind and poor solar. The potential for overlap could increase in case of monsoons or smoke. Solar and wind are also needed to charge storage.

NRDC said there is a handful of days that are extreme and that we do not have to bind ourselves to exceedance values. MRP asked what does CAISO need further to get comfort for exceedance? CAISO said it needs a high enough exceedance value. MRP asked if there could be collaboration over which exceedance value to pick.