COMMENTS OF THE STAFF OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION

ON THE 2013-2014 TRANSMISSION PLANNING PROCESS PRELIMINARY RELIABILITY RESULTS AND STAKEHOLDER MEETING

(MEETING DATE: SEPT. 25 AND 26, 2013)

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October 10, 2013

Introduction

The Staff of the California Public Utilities Commission ("CPUC Staff") appreciates this opportunity to provide comments on information presented and discussed at the California Independent System Operator's ("CAISO") September 25 and 26, 2013 Transmission Planning Process ("TPP") stakeholder meeting on preliminary reliability study results. This meeting also included Participating Transmission Owner ("PTO") proposed reliability solutions and discussion of the CAISO's proposed incorporation into the TPP of a new methodology to explicitly address nonconventional (other than transmission and conventional generation) options for meeting local reliability needs.

CPUC Staff comments cover the following topics. The most extensive comments address the new nonconventional options assessment methodology, under Topic 6 below.

1. Modifications made to TPP assumptions to more closely align with Long Term Procurement Plan ("LTPP") proceeding assumptions should be clearly described both in the next posting of study results and in the Transmission Plan.

2. The CAISO should continue to assess bulk transmission solutions (in combination with non-wires options) for the combined Los Angeles Basin and San Diego areas, and more localized solutions for each area should be approved only if urgent or needed regardless of which bulk system solutions are ultimately selected.

3. In the next posted reliability results and also in the Transmission Plan, the CAISO should describe for projects costing $30 million and above both the magnitude of avoided load shedding and the reasons for increased need relative to last year's

studies, and should clarify the role of benefit-cost ratios (BCR) for projects in general.

4. For the Valley Electric area, the next posted reliability results and the Transmission Plan should clearly distinguish transmission needs (and benefits) for reliability versus any additional transmission that might support potential future generation.

5. For production simulation studies (such as economic studies) the impacts (on results) of the most important data and modeling changes from previous years' studies should be clearly identified in posted study results and in the Transmission Plan.

6. The new methodology to assess nonconventional options for meeting local reliability needs should be clarified in several respects, should be fully discussed with stakeholders as the methodology evolves for application, and should be designed to inform and be consistent with the CPUC's LTPP proceeding and with ongoing multi-agency collaborative planning efforts.

CPUC comments on the above topics are included below.

1. Modifications Made To TPP Assumptions To More Closely Align With Long Term Procurement Plan (LTPP) Proceeding Assumptions Should Be Clearly Described Both in the Next Posting of Study Results and in the Transmission Plan.

The CAISO is participating in the CPUC's LTPP proceeding. Slide 10 of the CAISO's September 25 "Introduction and Overview" presentation indicated that TPP assumptions for the Los Angeles Basin and San Diego areas "have been aligned with the LTPP Track 4 study assumptions, resulting in some changes from the original 2013/2014 TPP study plan." These changes were not listed, and they should be clearly described in the CAISO's final reliability study results and in the 2013-2014 Transmission Plan itself. The CPUC's work in the LTPP proceeding will be facilitated by understanding CAISO's changes in assumptions as soon as possible.

2. The CAISO Should Continue to Assess Bulk Transmission Solutions (in Combination with Non-Wires Options) for the Combined Los Angeles Basin and San Diego Areas, and More Localized Solutions for Each Area Should be Approved Only if Urgent or Needed Regardless of Which Bulk System Solutions are Ultimately Selected.

With substantial local thermal capacity retirements, electric reliability solutions for the Los Angeles Basin (LA Basin) and San Diego areas have been a subject of intensive analysis and

discussion. While the ultimate strategy is not fully identified, it is clear that transmission, conventional gas-fired generation and nonconventional resources will likely all be utilized. It is also clear that solutions for the LA Basin and San Diego areas strongly interact, with key electric reliability investments in one area significantly impacting (generally benefitting) reliability in the other area.

Therefore, it is essential that transmission additions for reliability continue to be evaluated in a comprehensive manner that includes both the LA Basin and San Diego areas, also considering conventional (gas-fired) and nonconventional non-wires options. As also emphasized under Topic 6 below, this assessment should be consistent with assumptions and scenarios adopted in the CPUC's LTPP proceeding and in ongoing multi-agency collaborative planning efforts.

The specific implication of the above points for results presented at the September 25-26 stakeholder meeting, and especially the PTO-proposed reliability solutions, is that major bulk transmission projects such as identified by PTOs for their own areas should be assessed in a holistic manner for the entire South Coast load center, in combination with non-wires options. Furthermore, any more localized reliability transmission solutions identified by individual PTOs should be considered by the CAISO for approval only if shown to be so urgent that they cannot wait for better resolution of the larger South Coast reliability strategy, or if they are shown to clearly be needed and cost-effective regardless of how the larger strategy unfolds.

3. In the Next Posted Reliability Results and also in the Transmission Plan, the CAISO Should Describe for Projects Costing $30 Million and Above Both the Magnitude of Avoided Load Shedding and the Reasons for Increased Need Relative to Last Year's Studies, and Should Clarify the Role of Benefit-Cost Ratios ("BCR") for Projects in General.

Substantial reliability transmission additions were proposed as mitigations at the September 25-26 stakeholder meeting (on the order of $2 billion). For any projects that the CAISO is considering approving that have estimated costs $30 million and above, the CAISO should clearly describe (1) what has changed since last year's studies such that these projects are needed despite the large amounts of reliability projects approved in

recent years, and (2) what is the avoided amount of load drop (e.g., under modeled contingencies) avoided by such projects.

Additionally, as stated in CPUC Staff comments last year, benefit-cost ratios (BCR) can be helpful for understanding the value and justification of reliability transmission projects. However, BCR are only reported for a few, generally smaller, proposed reliability projects. It appears based on past discussions that BCR may be calculated only when a studied contingency impacts a radially-supplied load such that the load drop under a contingency is readily characterized. However, CPUC Staff request clear and accessible (to all stakeholders) documentation explaining exactly under what circumstances BCR are and are not calculated, including why BCR are not calculated for certain circumstances. It appears that circumstances where BCR are not calculated are in fact the circumstances giving rise to the largest and most costly reliability transmission projects. As explained above, CPUC Staff request that for such projects there be identification of what load drop is being avoided. If circumstances make this impossible or ambiguous to quantify, then the CAISO (or PTOs) should explain why this is so and, in that event, should identify what measure we have of the reliability benefit of the proposed project.

4. For The Valley Electric Area, the Next Posted Reliability Results and the Transmission Plan Should Clearly Distinguish Transmission Needs (and Benefits) for Reliability Versus Any Additional Transmission That Might Support Potential Future Generation.

The September presentation by the Valley Electric Association (VEA) identified a large 230 kV transmission project for both reliability and support of potential new generation. In contrast, the CAISO staff report identified largely operational solutions to address reliability issues. In its upcoming report on final reliability solutions for the VEA area, the CAISO should clearly distinguish transmission serving reliability versus generator interconnection purposes, and should identify what if any load drop would result after applying operational solutions (including opening lines, adjusting taps) without substantial transmission investment.

5. For Production Simulation Studies (Such as Economic Studies) the Impacts (on Results) of the Most Important Data and Modeling Changes From Previous Years' Studies Should Be Clearly Identified in Posted Study Results and in the Transmission Plan.

The CAISO clearly puts substantial effort into annually updating and improving data and assumptions for production simulation modeling, including making local refinements to the Transmission Expansion Planning Policy Committee's ("TEPPC") west-wide base ("Common") case. CPUC Staff appreciate having such updates and refinements listed, as was done for the September 25-26 stakeholder meeting.

It is unrealistic to expect the CAISO to explain or test the impact of each data or modeling revision, and stakeholders may choose to seek clarifications regarding particular revisions of interest to them. However, more generally for the overall stakeholder audience, CPUC Staff request that reported results of the CAISO's production simulation studies (such as an update of the Delaney-Colorado River project study), include explicit identification of the impacts (on results) of major, most impactful changes to data and modeling assumptions. For example, removing the SCE 60:40 internal generation constraint and changing the representation of west-wide hurdle/wheeling rates between areas may have significant impacts on results, and furthermore such impacts may not be straightforward or intuitive. This may also be true for other potentially impactful modeling changes. Both stakeholder understanding and valuable discussion/vetting would benefit from reporting the impacts of such changes.

6. The New Methodology to Assess Nonconventional Options for Meeting Local Reliability Needs Should be Clarified in Several Respects, Should be Fully Discussed With Stakeholders as the Methodology Evolves for Application, and Should be Designed to Inform and be Consistent with the CPUC's LTPP Proceeding and with Ongoing Multi-Agency Collaborative Planning Efforts.

CPUC Staff appreciate the CAISO's initiative to more fully integrate into the TPP a methodology to consider "alternatives to transmission or conventional generation to address local needs." This can support continuing efforts to address three major planning challenges:

a. Assessing "non-wires" alternatives within the TPP;

b. Pursuing the state's "loading order" emphasizing demand-side, renewable and distributed resources, along with beginning deployment of storage; and

c. Meeting the electric reliability needs of the important Los Angeles Basin and San Diego "local capacity" areas facing retirement of large amounts of once-through cooled generation (now including SONGS) - - in a timely manner that balances energy, environmental and economic priorities.

We expect that the CAISO's initial proposal for a methodology to assess non-conventional options as part of local area reliability solutions will need to be fleshed out and refined as it is applied and tested, and as both planning and commercial programs evolve, particularly for major load centers. Nonconventional options are assumed to include energy efficiency, demand response ("DR"), storage and distributed generation such as PV and possibly CHP. With the request window for reliability solutions closing on October 15, it is clearly too late to expect a robust set of proposals for nonconventional options to be submitted for assessment in the current TPP cycle. However, we hope that during the remainder of the 2013-2014 TPP cycle there will be opportunity for meaningful, realistic application of the proposed methodology to assess nonconventional options. This should (1) give all parties a better idea of the intended assessment process and its challenges, (2) provide an opportunity for stakeholders to discuss and comment on the methodology, and (3) provide a clear starting point for refining the methodology going forward.

A TPP-based methodology for characterizing, combining (e.g., into portfolios) and assessing nonconventional solutions to local needs must be consistent with, and should complement, resource planning priorities and scenarios in both the CPUC's LTPP process and in ongoing multi-agency collaborative planning processes. The nonconventional options assessment methodology as initially applied and subsequently refined should specifically aim to inform the LTPP and collaborative processes regarding desirable characteristics, magnitudes, locations and combinations of nonconventional options, as well as tradeoffs with transmission and conventional generation. Additionally, both the nonconventional options examined and identified, and the transmission and conventional resource investments they might displace should be explicitly related to and explained in terms of planning scenarios being addressed in the LTPP and collaborative processes. This will maximize the value of the CAISO's

nonconventional local options assessment, and will reduce potential for confusion or inconsistency among planning processes.

To support the above objectives, CPUC Staff request that several specific priorities be followed as the proposed TPP-based methodology for assessing nonconventional options to meet local needs is applied and refined. This should be accomplished through posting of study results and discussion with stakeholders leading up to posting of the 2013-2014 Transmission Plan, where applicable within the Plan itself, and on an ongoing basis in future TPP cycles.

i. There should be an open transparent process for developing, applying and refining a methodology for assessing nonconventional options for meeting local area needs, including two-way interaction with stakeholders. We hope that this outcome is implied in establishing this endeavor as a "stakeholder initiative."

ii. The methodology and its application should provide full opportunity for non-dispatchable options such as energy efficiency, dynamic pricing tariffs and PV (and perhaps some CHP) as well as dispatchable options, and the approach to assessing, comparing and combining the varied kinds of nonconventional options should be clearly described, discussed with stakeholders, and adjusted as necessary, such as in response to both planning and commercial developments, and in response to lessons learned during application of this methodology.

iii. It is important to clarify how the peak load-shaving versus contingency response attributes of different nonconventional options will be addressed and interrelated in the CAISO's assessment methodology. Ability to provide and/or combine peak-shaving and contingency response will differ significantly among options. To date, limited illustrations of the proposed methodology have emphasized both peak load shaving and the importance of speed and duration of response to contingencies, where the latter may or may not correspond to peak loads.

iv. Related to topic iii. above, CPUC Staff hope that there will be further clarification and discussion of the types of modeling and analyses conducted, since the nature of both local area reliability problems and characteristics of nonconventional solutions suggest that "snapshot" powerflow (reliability) analyses will be necessary but not sufficient, and that other kinds of analysis may be needed - - but this needs to be clarified.

v. In assessing nonconventional options and their ability to displace "conventional" solutions, the CAISO should not disqualify particular options based on criteria (such as ability to provide reactive power, inertia, or specific bus locations) not initially specified as desired characteristics for assessment. Refer also to Topic vi. below.

vi. Following from item v. above, the CAISO should clarify if, how and when specification of required characteristics in greater detail (such as specific locations

or reactive power) may be pursued under certain conditions, such as under high reliance on nonconventional options. Any method to require or assess increased locational specificity should be consistent with and designed to utilize locational information provided by existing and developing procurement programs such as for energy efficiency and DR.

vii. CPUC Staff requests that the CAISO clarify the process and expectations for modifying any initial framework for characterizing required operational characteristics (e.g., involving parameters such as response time and duration of response) based on proposals received, lessons learned from initial application of the assessment methodology, or planning and other developments occurring outside of the TPP. This should include coordination with new CPUC proceeding R.13-09-011 focused on modifying DR programs to best align with today's resource planning needs, and with similar efforts to align demand-side resource programs with planning needs.

viii. The CAISO should provide a schedule or at least a process for sharing and discussing with stakeholders the results of this new methodology that interacts so strongly with other planning processes.

ix. In applying this new methodology in the present TPP cycle and beyond, the CAISO should provide specific insights and findings regarding the tradeoff between nonconventional options and different magnitudes and locations of transmission investment. Furthermore, it is not too early to begin discussing and clarifying how implementation of nonconventional options would be monitored and verified (e.g., appropriate evaluation, measurement and verification methods, as well as milestones) to avoid or defer transmission or other investment.

x. The treatment of and distinction between limited nonconventional options already embedded in the TPP base case versus additional nonconventional options needs to be clarified and discussed, including explicit identification and enumeration of each (embedded versus incremental).

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