

SDG&E's Comments on the
CAISO's April 13, 2017 Stakeholder Meeting concerning the
CAISO's "2018 and 2022 Local Capacity Technical Study Final Results"

The Shift in Peak Load Hours has Significant Implications for Future Local Capacity Requirement (LCR) Determinations

During the April 13, 2017 stakeholder meeting, the CAISO discussed the results of a "no-solar" sensitivity study that is documented in the CAISO's April 6, 2017 "2018 Local Capacity Technical Analysis, Draft Report and Study Results." This sensitivity study represents a first step in recognizing that with large amounts of behind-the-load meter distributed generation, the critical time period for local reliability concerns has shifted from mid-afternoon hours during hot summer weather, to the early evening hours on these days.

During the early evening hours, solar generation is essentially zero. This has implications for the generation dispatch pattern used to determine LCRs, as well as for the Net Qualifying Capacity (NQC) of generators that Load Serving Entities (LSEs) use to establish compliance with LCRs.

SDG&E believes that the CAISO needs to comprehensively consider how the shift in the critical time period affects all elements of LCR determination and all elements of NQC determination. In particular, if the critical time period moves into the early evening hours, the dispatch pattern of generators that have significant impact on the LCR determination—both within and outside the CAISO Balancing Authority—may be much different than the dispatch pattern during mid-afternoon hours. Generators that may exhibit different dispatch patterns include Qualifying Facilities for which a LSE has dispatch control, wind resources and generators that are typically run only during the hottest periods of the day.

Imports into the CAISO Balancing Authority during the early evening hours may be at quite different levels than during the middle of the afternoon. The CAISO's existing Maximum Import Capability (MIC) determinations are based on imports during historical peak load periods. Historical peak load periods have been in the afternoon.

Additionally, ambient weather conditions typical of the early evening (e.g., cooler temperatures and/or higher wind speeds) may allow the use of higher thermal ratings for certain transmission facilities.

Finally, SDG&E notes that to the extent the NQC of local solar generators is reduced or set to zero, the availability of local gas-fired generation becomes more critical. This may have important consequences for gas-storage facilities since an adequate supply of natural gas is obviously a pre-requisite for local gas-fired generation to be a dependable source of capacity.

SDG&E is not suggesting that the 2018 LCR results should be modified. Rather, SDG&E believes the CAISO should start thinking about taking the next steps in determining how the shift in peak load hours will affect future LCR and NQC determinations.

The CAISO Needs to Consider a Reasonable Range of Options for Reducing LCRs

The cost of meeting LCRs is directly related to the level of LCRs. Higher LCRs result in higher costs because competitive pressures weaken as the level of LCRs approaches the available pool of local dependable capacity. If LCRs can be reduced, competitive pressures are increased and local dependable capacity prices should be lower.

While the Local Capacity Technical Study process is not the forum for evaluating the costs and benefits of different options that may reduce LCRs, SDG&E believes the level of LCRs in the Greater Imperial Valley-San Diego LCR area, in the San Diego LCR sub-area, in the Western LA Basin LCR area; and the trade-offs between LCRs in the different areas; underscores the importance of analyzing the costs and benefits of different options that may reduce these LCRs. This analysis should take place within the CAISO's annual Transmission Planning Process (TPP).

As suggested in SDG&E's earlier comments, there are a number of options for reducing LCRs -- with both short- and longer-term lead-times -- that should be analyzed within the TPP. These include Remedial Action Schemes, operating procedures and upgrades of key transmission facilities. In the latter category, SDG&E believes upgrades of the 230 kV Victorville-Lugo line, the 230 kV El Centro-Imperial Valley line and SDG&E's proposed AC-to-DC conversion of the 500 kV North Gila-Imperial Valley-Miguel transmission line warrant particular attention.

Supplemental Comments on the Need to Retire Peaking Units at Kearney Substation

The four (4) remaining peaking units at Kearney should be removed from service by the end of 2017, so that they may be physically removed and the land used for a relocated, rebuilt, and expanded Kearney 69 kV switchyard, 69/12 kV distribution substation, and electric service center. Several transmission upgrade projects have been approved by the CAISO and have either been completed (TL660 reconductor) or are in progress (TL676 and TL663 reconductors, TL600 loop-in to Mesa Heights substation) that will substantially eliminate the Mission LCR sub-area.

The need to rebuild the Kearney Substation is based on the age and condition of the existing equipment, need for expanded distribution capacity, and the need to better utilize the space that the substation and remaining peakers occupy. Kearny Substation ranks second in the number of substation outages out of SDG&E's substation fleet. The capacity of the existing substation cannot be expanded to a fourth 69/12 kV distribution bank, which is required to serve a new Kaiser Permanente hospital and to meet projected electric distribution load growth in the Kearny Mesa area. Kearny Substation also has aging infrastructure issues, including failing 69kV and 12kV glass, aging 12kV metalclad switchgear, non-standard bus tie arrangement, six transmission and eight distribution breakers designated for replacement, and four 12kV capacitors which need to be replaced and connected to new 12kV breaker positions.

An SPS is proposed and will be in service by summer 2018 to mitigate the remaining overloads until the last of these projects is completed by summer 2019. The N-1-1 of TL663 followed by TL 676 will overload TL600 (Kearny- Clairemont Tap). In addition, the contingency of Mission 69kV North Bus outage will overload TL676 above its emergency rating. In the absence of the

Kearny generation units, the proposed RAS will prevent thermal overload on TL 676 and an overload on TL 600 during the above contingencies. This automatic scheme will check the post-contingency loading on the overloaded lines and mitigate by dropping 12 kV load out of the load pocket. This is done by opening one of the 69/12kV transformers at Mesa Heights substation. The Mesa Heights RAS will have redundant substation hardware-based RAS (RAS A and RAS B), SCADA control points to enable/disable, along with local cutout switches. The proposed SPS has been reviewed and tentatively approved by CAISO operations planning staff.