BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 12-03-014 (Filed March 22, 2012)

OPENING BRIEF OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) IN TRACK 4 OF THE LONG-TERM PROCUREMENT PLAN PROCEEDING

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I. INTRODUCTION AND BACKGROUND

Pursuant to the November 1, 2013 ruling of Administrative Law Judge ("ALJ") David Gamson and Rule 13.11 of the Rules of Practice and Procedure of the California Public Utilities Commission (the "Commission"), San Diego Gas & Electric Company ("SDG&E") submits this Opening Brief regarding issues within the scope of Track 4 of the above-captioned proceeding.

In its May 21, 2013 Scoping Memo, the Commission established Track 4 of the long-term procurement plan ("LTPP") proceeding for the purpose of considering the local reliability impacts of closure of the San Onofre Nuclear Power Generating Station ("SONGS").[1/] It noted that the California Independent System Operator (the "CAISO") would perform studies to assess both interim (2018) and long-term (2022) local reliability needs in the Los Angeles Basin local area and the San Diego sub-area resulting from

[1/] *Revised Scoping Ruling and Memo of the Assigned Commissioner and Administrative Law Judge* ("May 21 Scoping Memo"), p. 4.

unavailability of SONGS, and adopted assumptions to be used in developing these studies.[2/] It noted further that SDG&E and Southern California Edison Company ("SCE") had separately undertaken studies of local area need in the absence of SONGS.

In its *Assigned Commissioner and Administrative Law Judge's Ruling Regarding Track 2 and Track 4 Schedules* issued September 16, 2013 ("Ruling"), the Commission addressed the impact on the Track 4 scope and procedural schedule of the unavailability of the results of the CAISO's Transmission Planning Process ("TPP"). The Commission noted that "[t]he TPP is expected to provide useful information to inform the Commission regarding a decision on both the level and type of resources to replace SONGS capacity in the long run."[3/] It concluded that while the TPP results should be taken into account in determining the need for new local resources, "[a]t the same time, due to long lead times for new resources, there is an urgency to start moving toward identifying and filling any identified need as soon as possible."[4/]

Based upon this conclusion, the Commission determined that it would consider the TPP results and their impact on local need in Southern California in a subsequent phase of the instant proceeding or in the next LTPP proceeding, and would in the meantime continue with Track 4 in order to "provide guidance and direction to [SCE] and [SDG&E] to allow these utilities to move forward on a complex and multi-year procurement process."[5/] Specifically, it declared that it would "consider whether an interim procurement authorization is required, and if so, the parameters for such

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2/ *Id.* at pp. 5, 6.
3/ Ruling, p. 2.
4/ *Id.* at pp. 2-3.
5/ *Id.* at p. 3.

authorization (*e.g.*, types of resources, procurement process, etc.)."[6] As discussed in more detail below, the Commission should move forward now with authorization of interim procurement of new local resources required in SDG&E's service territory and, because such resources are required to meet local area reliability needs, should allocate the cost of such new resources to all benefitting customers in SDG&E's service territory pursuant to the Cost Allocation Mechanism ("CAM") established under Public Utilities Code § 365.1(c)(2)(A)-(B).[7]

II.
SUMMARY OF RECOMMENDATIONS

In accordance with the direction provided by ALJ Gamson, and as discussed in greater detail herein, SDG&E offers the following recommendations concerning interim authorization of procurement of new resources.

1. *Should the CPUC authorize SCE and/or SDG&E to procure additional resources at this time for the purposes within the scope of this proceeding?*

As discussed in more detail herein, technical studies performed by SDG&E demonstrate a need for at least 1028 MW of new local resources between now and 2022 in the San Diego sub-area. SDG&E's minimum base case analysis assumed 408 MW of load reduction/resource additions from incremental preferred resources *above current levels* (prior to running the transmission models), which effectively reduces minimum local need in the SG&E sub-area to 620 MW (1028 MW – 408 MW).[8] Thus, SDG&E has identified in this Track 4 a minimum need for new local resources in the San Diego

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[6] *Id.*

[7] All statutory references herein are to the Public Utilities Code unless otherwise noted.

[8] SDG&E/Anderson, Exh. SDG&E-1, p. 9. The analysis assumes a "dependable" peak reduction of 338 MW of Energy Efficiency, 30 MW of rooftop solar and 20 MW of Combined Heat and Power resources. *Id.*, p. 7, Table 1. It also assumes 20 MW of dependable peak reduction associated with local renewable generation. *Id.* at p. 11, Table 2.

sub-area of between 620 MW and 1,470 MW by 2022.[9] Accordingly, SDG&E respectfully requests that the Commission authorize it to commence with procurement of new long lead-time resources necessary to meet the identified local capacity need. SDG&E's request is described in more detail in Section III below.

2. *If so, what additional procurement amounts should be authorized at this time? Please specify any calculation that leads to this position.*

As noted above, SDG&E's base case assumed 408 MW of load reduction/resource additions from incremental preferred resources above current levels. Accordingly, SDG&E proposes to aggressively pursue procurement of preferred resources such as Energy Efficiency ("EE"), Combined Heat and Power ("CHP") and rooftop solar through the existing dedicated proceedings in order to achieve the 408 MW load reduction/resource additions assumed in its base case.

Of the 620 MW minimum need that remains (after assuming an incremental 408 MW of preferred resources), SDG&E's procurement strategy holds 70-120 MW open to be filled with Demand Response ("DR") and/or Energy Storage ("ES") resources in the Commission proceedings dedicated to each such resource, provided that these resources satisfy requirements established by the CAISO for operational characteristics that address local reliability needs. For the remaining need, SDG&E that the Commission authorize it through a decision issued in this proceeding to procure 500-550 MW of long lead-time supply-side resources, including conventional generation and/or renewable resources. SDG&E's request is described in more detail in Section III below. The calculation that supports SDG&E's position is described in Section IV below.

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[9] SDG&E/Jontry, Exh. 3, p. 2.

3. *What additional resources, if any, should be authorized to fill procurement needs? Should there be any requirements or restrictions on procurement amounts for any specific resources or categories of resources?*

As explained herein, SDG&E has identified a balanced set of resources to meet the total need for local resources in its service territory. In the context of this proceeding, the Commission should authorize SDG&E to procure 500-550 MW of long lead-time supply-side resources, including conventional generation and/or renewable resources. Given the significant lead time involved in construction of new resources, this portion of the procurement must be undertaken as soon as is feasible.[10/] The Commission should direct that procurement of preferred resources be undertaken in the relevant dedicated Commission proceedings. SDG&E's recommended approach to procurement of different types of resources is described in more detail in Sections III and V below.

4. *What process should the utilities use to fill any procurement amounts authorized at this time?*

For procurement authorized in this proceeding, the Commission should direct SDG&E to issue a request-for-offers ("RFO") or to contract bilaterally. As SDG&E has pointed out, moving forward on an expedited basis with a bilateral contract to address a portion of LCR need would support the policy goals of the State related to timely retirement of OTC facilities and would promote system reliability – the sooner new local resources are added to the portfolio, the lower the reliability risk.[11/] This proposal is discussed in more detail in Section III.

10/ *See* D.13-02-015, *mimeo*, p. 63.

11/ *Comments of San Diego Gas & Electric Company on ALJ Questions from Pre-hearing Conference held September 4, 2013*, filed September 30, 2013 in R.12-03-014 ("SDG&E Comments"), pp. 5-6.

5. *Are there other determinations the CPUC should consider, or conditions the CPUC should impose, regarding Track 4 procurement?*

The Commission should order the net capacity costs of any new local resources procured in accordance with Commission authorization issued in this Track 4 to be allocated to all bundled service, direct access ("DA") and community choice aggregation ("CCA") customers in SDG&E's service territory on a non-bypassable basis consistent with the cost allocation mechanism established pursuant to § 365.1(c)(2)(A)-(B). This issue is discussed in more detail in Section VI below.

III.
RESULTS OF TECHNICAL STUDIES AND INTERIM PROCUREMENT RECOMMENDATION

Prior to initiation of Track 4, SDG&E and SCE began technical studies to examine the minimum generation resources required for the San Diego and Western Los Angeles Basin Local Capacity Resource ("LCR") areas for the year 2022.[12/] The studies examined LCR in the absence of generation at SONGS and the expected retirement of generation facilities including, but not limited to, the coastal power plants that currently use "Once Through Cooling" ("OTC") technologies.[13/] The studies produced results that were very similar to those presented by the CAISO. The SDG&E/SCE transmission studies identified a total need of 4,572 MW; whereas the CAISO studies identified a total need of between 4,507 and 4,642 MW.[14/]

12/ SDG&E/Anderson, Exh. SDG&E-1, p. 2.

13/ *Id.*

14/ SDG&E/Jontry, Exh. SDG&E-3, p. 12, Table 3. The 4,572 MW value assumes that Pio Pico is a solution to the identified local need, which is consistent with the CAISO's approach. SDG&E/Anderson, Exh. SDG&E-1, p. 2, note 1.

For the San Diego sub-area, SDG&E identified a minimum local need of between 620 MW and 1,470 MW of dependable capacity in 2022 (assuming, as noted below, an incremental 408 MW of preferred resources).[15/] SDG&E/SCE did not study need in 2018, however the CAISO's analysis determined a local need of 920 MW in 2018.[16/] SDG&E's base case analysis assumed (i) 408 MW of load reduction and an increase in supply from incremental preferred resources above current levels (including an increase in EE, CHP, rooftop solar and local supply-side renewables);[17/] and (ii) Commission approval of SDG&E's application ("A.") 13-06-015, which seeks authority to enter into a power purchase and tolling agreement ("PPTA") with Pio Pico Energy Center ("Pio Pico") for 300 MW of conventional generation.[18/] Since SDG&E has not yet secured the incremental 408 MW of preferred resources assumed in the base case, its minimum need is effectively 1028 MW. In addition, if A.13-0-015 is denied, an incremental 300 MW would be added to the minimum need calculation.

SDG&E has identified major transmission additions that could potentially reduce the need for dependable capacity.[19/] As the Commission acknowledged in its September 16 Ruling, SDG&E's local need determination may be modified based upon the results of the TPP.[20/] Accordingly, SDG&E's interim procurement proposal focuses on the low end of its preliminary need finding – *i.e.*, 620 MW (or 1028 MW when preferred resources

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15/ SDG&E/Jontry, Exh. 3, p. 2.
16/ CAISO/Sparks Exh. 1, p. 19, Table 9. It should be noted that SDG&E's Pio Pico Application would meet 300 MW of this need.
17/ SDG&E/Anderson, Exh. SDG&E-1, p. 9; *see also*, p. 7, Table 1, p. 9, Table 2.
18/ SDG&E/Jontry, Exh. SDG&E-3, p. 2.
19/ *Id.* at pp. 13-14.
20/ Ruling, p. 3.

yet to be available/procured are included).[21/] Based on its study results and those of the CAISO, SDG&E proposes to pursue the following mix of resources to meet local capacity need:

- ***Assumed Preferred Resources***: This element of SDG&E's procurement strategy reflects the need to aggressively pursue the 408 MW of incremental preferred resources assumed in the base case.[22/] SDG&E will pursue cost-effective EE in the context of the Commission's dedicated EE proceeding (338 MW), as well as CHP (20 MW), rooftop solar (30 MW) and dependable peak reduction associated with local renewable generation (20 MW).[23/]
- ***Demand Response/Energy Storage***: SDG&E's procurement strategy holds 70-120 MW open to be filled with DR and/or ES resources in the Commission proceedings dedicated to each such resource, provided that these resources satisfy requirements established by the CAISO for operational characteristics that address local reliability needs.
- ***Supply-Side Procurement***: SDG&E requests authorization through a decision in this proceeding to issue a RFO or to contract bilaterally[24/] to procure between 500-550 MW of long lead-time supply-side resources, such as

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[21/] SDG&E notes that since its total minimum local need is currently closer to 1028 MW, its proposed procurement strategy would achieve an approximately 50/50 split between preferred and conventional resources. In other words, of its 1028 MW minimum need, SDG&E proposes to procure 500-550 MW from supply-side resources, including conventional generation resources.

[22/] SDG&E/Anderson, Exh. SDG&E-1, p. 9.

[23/] SDG&E/Anderson, Exh. SDG&E-1, p. 4, p. 7, Table 1, p. 9, Table 2; p. 10.

[24/] SDG&E notes that the Commission authorized SCE to undertake bilateral procurement of local resources in its decision in Track 1 of this proceeding. D.13-02-015, *mimeo*, Ordering Paragraph 9. SDG&E proposed the bilateral procurement approach in its comments responding to questions posed by ALJ Gamson. SDG&E Comments, *supra*, note 11, pp. 5-6.

conventional generation and/or renewable resources.[25/] Opportunities to upgrade and increase capacity at existing resources should also be considered.[26/]

The Commission has emphasized the need to take proactive steps to prevent development of a reliability crisis in which there exists insufficient time to engage in additional procurement.[27/] Ultimately, the determination regarding the appropriate timeline for new resource procurement will involve a balancing of the State's policies regarding OTC retirement, competitive procurement and preferred resources, as well as system reliability considerations. The preemptive approach of authorizing procurement to meet a conservative quantity of LCR need and directing SDG&E to undertake such procurement through an RFO or bilateral negotiations will ensure that the State is not caught flat-footed and will help to prevent a future reliability crisis.

IV.
THE COMMISSION SHOULD GRANT SDG&E'S INTERIM PROCUREMENT AUTHORIZATION REQUEST

A. Overview of the Local Capacity Resource Requirement

In D.06-06-064, the Commission established a local procurement obligation as a component of the broader resource adequacy requirements ("RAR") program applicable

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25/ As discussed herein, SDG&E's request assumes Commission approval of A.13-06-015 (SDG&E's Pio Pico PPTA) and construction of the Pio Pico facility. If the Pio Pico application is not approved and the facility is not constructed, SDG&E would increase the proposed amount of capacity to be procured by 300 MW.

26/ SDG&E also notes that it is exploring the feasibility of developing of an energy park that would be made available to independent generators in future RFOs to meet local resource needs. SDG&E/Anderson, Exh. SDG&E-1, pp. 16-17. The goal of the energy park would be to reduce the lead-time required to build new generation facilities. To the extent it elects to pursue this energy park proposal, SDG&E will file a separate application with the Commission seeking approval. *Id.* at p. 17.

27/ D.09-01-008, *mimeo*, p. 18.

to Commission-jurisdictional electric load-serving entities ("LSEs").[28/] The decision explains the distinction between "local" RAR and "system" RAR as follows:

> Under System RAR, each LSE is required to procure the capacity resources including reserves needed to serve its aggregate system load but is not required to account for local transmission constraints that could prevent the procured capacity from being available to the CAISO to serve load where the LSE's retail customers are located. Thus, under the current program, LSEs could be resource-adequate on an aggregate or system basis but transmission-constrained local load pockets could still be resource-deficient. It is this problem that Local RAR is intended to resolve.[29/]

Thus, even if system-wide studies do not identify a need for additional resources on a statewide basis, there may nevertheless still be a need for new resources to meet local resource adequacy criteria. The decision explains that "[l]ocal load pockets are defined by physical transmission constraints. If the transfer capability into a load pocket is less than the load demand within the area, then, depending on reliability criteria, additional generation capacity within the load pocket will be needed to satisfy the load demand. This amount of generation capacity is the LCR or Local Capacity Requirement."[30/] The decision requires that LCRs be allocated to individual Commission-jurisdictional LSEs pursuant to a Commission-approved allocation methodology, and provides that such LSEs are subject to penalties for failure to meet local procurement obligations.[31/]

Technical studies, such as those undertaken by the CAISO and SCE/SDG&E in this proceeding are conducted in order to determine whether there are sufficient resources in the San Diego sub-area to meet grid reliability criteria established by the North

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28/ D.06-06-064, *mimeo*, p. 2.
29/ *Id*. at p.5.
30/ *Id*. at pp. 12-13.
31/ *Id*. at pp. 3, 4, 24, 66-69.

American Electric Reliability Corporation ("NERC"), the Western Electricity Coordinating Council ("WECC") and the CAISO on a long-term basis. To the extent a need for new local resources to meet the LCR procurement obligation is identified, the Commission has made clear that it does not support "just in time" capacity procurement; planning for and procuring new resources must occur well in advance of the need for the resources. As the Commission has noted – most recently in its decision in Track 1 of this proceeding – construction of new resources involves a seven to nine year lead time.[32/] Thus, the Commission and the IOUs must take proactive steps to ensure adequate lead time for construction of new resources in order to prevent development of a reliability crisis in which there exists insufficient time to engage in additional procurement.[33/]

B. Track 4 LCR Need Calculation

SDG&E's interim procurement authorization recommendation is based upon the results of the technical studies performed by SDG&E/SCE and the CAISO. A detailed explanation of the technical studies performed by SDG&E is set forth in the testimony of SDG&E witness, John Jontry. A description of the load and resource assumptions relied upon in the technical studies is set forth in the testimony of SDG&E witness, Robert Anderson. The purpose of the SDG&E/SCE technical studies was to determine the amount of additional generation required in the San Diego and Western Los Angeles Basin LCR areas for the year 2022, and to determine the potential LCR benefits of several major transmission upgrades for the same study year of 2022.[34/] As Mr. Jontry explained, the SDG&E/SCE studies were performed "with the best data and analytical techniques available at the time; however, further study work is required to determine the

[32/] D.13-02-015, *mimeo*, p. 63.
[33/] *See* D.09-01-008, *mimeo*, p. 18.
[34/] SDG&E/Jontry, Exh. SDG&E-3, p. 3.

optimal combination of generation and transmission resources to meet the forecast load."[35/] As noted above, the results of the CAISO's TPP may permit further refinement of the study results. The SDG&E/SCE transmission studies identified a total need of 4,572 MW.[36/] This result is similar to that presented by the CAISO, which found a need between 4,507 and 4,642 MW in total by 2022.[37/]

Based on its technical studies, SDG&E has identified a minimum generation need of between 620 MW and 1470 MW of Net Qualifying Capacity ("NQC") in the San Diego LCR sub-area (after assumed growth in preferred resources).[38/] This analysis assumed substantial growth in EE, as well as additional rooftop solar, CHP and local renewable resources; as noted above, a total of 408 MW of these preferred resources was included in the model as incremental load reductions/resource additions, which reduced the need found in the modeling.[39/] In addition to the assumptions regarding future availability of preferred resources, it is important to note that SDG&E's analysis assumed approval of the 300 MW identified in SDG&E's Pio Pico application (A.13-06-015).[40/] As Mr. Jontry explained, the 620 MW figure represents the minimum amount of generation required to meet the forecasted LCR need for San Diego sub-area for 2022 (in addition to the needs assumed to be met by Pio Pico and the preferred resources that were included in the model), assuming construction of the identified Imperial Valley-NCGen

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35/ *Id.* at p. 2.

36/ *Id.* at p. 12, Table 3. The 4,572 MW value assumes Pio Pico as a solution to the identified LCR need. *See supra*, note 14.

37/ *Id.* at p. 12, Table 3.

38/ *Id.* at p. 2; p. 11, Table 2.

39/ SDG&E/Anderson, Exh. SDG&E-1, p. 9; *see also, id.*, Tables 1 and 2.

40/ The treatment of the Pio Pico generation in SDG&E's studies differed from treatment in the CAISO's studies in that the CAISO assumed that the generation identified in the Pio Pico application was a solution to the generation need, whereas the SDG&E analysis assumed Pio Pico generation in the base case rather than treating it as a solution to LCR need. SDG&E/Jontry, Exh. SDG&E-3, p. 12.

Direct Current ("DC") Regional Transmission Project, which has been proposed by SDG&E and submitted to the CAISO for approval as a reliability project.[41/] The higher 1470 MW figure represents the minimum amount of generation required to meet the forecasted LCR need for the San Diego LCR sub-area for 2022 (in addition to the needs assumed to be met by Pio Pico and the preferred resources that were included in the model), assuming no major transmission projects are approved to increase import capability into the San Diego load center.[42/]

As discussed below, the need finding resulting from the SDG&E/SCE technical studies is based upon assumptions regarding load growth and resource availability, and takes into account relevant NERC, WECC and CAISO system planning standards. With regard to the assumptions used in the studies, SDG&E witness, Robert Anderson, explained that because these studies were initiated prior to the creation of Track 4, certain of the assumptions SDG&E used in its transmission studies similar but not identical to those used by the CAISO use in its Track 4 studies. Nevertheless, as noted above, the SDG&E/SCE studies produced results that are very similar to those presented by the CAISO. The load and resource assumptions used by SDG&E, as well as the relevant system planning criteria are described below.

(i) Load and Resource Assumptions Used in the Track 4 Analysis

As noted above, the SDG&E/SCE and CAISO studies incorporated slightly different assumptions regarding future demand and availability of resources. The CAISO assumptions were higher in some instances and lower in others.[43/] As SDG&E witness Anderson pointed out, however, "there are a number of different paths that may be taken

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41/ *Id.* at pp. 2-3.
42/ *Id.* at p. 3.
43/ SDG&E/Anderson, Exh. SDG&E-1, p. 2.

to arrive at the same approximate need determination."[44/] As a practical matter, it is nearly impossible to develop precise and accurate assumptions regarding long-term demand and resource availability. Moreover, assumptions change over time. Indeed, as Mr. Anderson noted, "the modeling assumptions used by SDG&E to perform its studies were based on information known *at the time* – *i.e.*, the assumptions were included in order to begin the modeling work with the understanding that as time progresses, additional amounts of certain resources may be found to be cost-effective and be used to meet the identified need."[45/] Thus, debating exact assumptions serves little purpose. This is particularly true here, given the heightened degree of uncertainty that exists related to the impact of potential transmission system modifications being studied by the CAISO. To account for the uncertainty in the need calculation, SDG&E has identified its LCR need as existing within a specified range rather than presenting an exact MW quantity of LCR need.

The load and resource assumptions relied upon in SDG&E's analysis are set forth below. The analysis assumes a total of 408 MW of load reduction and an increase in supply from incremental preferred resources (from current levels) – in other words, SDG&E's minimum LCR need of 1028 is reduced by 408 MW of preferred resources assumed in the base case to reach the minimum 620 MW LCR need set forth in Mr. Jontry's Table 2.[46/] It is important to note that certain preferred resources were included in the base case as a load reduction (*e.g.*, EE), while others were not included in the base case, but were instead analyzed as potential solutions to the resulting LCR need

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44/ *Id.* at p. 3.
45/ *Id.* at p. 6 (emphasis in original).
46/ *Id.* at p. 9.

calculation (*e.g.*, DR).[47] As Mr. Anderson explained, whether a particular resource is counted in the base case as a load reduction (*i.e.*, counted at the "front end" in order to calculate the LCR need) or instead as a solution to resulting LCR need (*i.e.*, at the "back end" as a solution to meeting LCR need, *after* the LCR need has been calculated), has little practical significance:

> [I]f a model run was done with no incremental preferred resources, it might show a need for new resources of 500 MW. After the run it might be determined that the Commission wants to plan for incremental EE to meet 250 MW of this identified need, leaving 250 of remaining need. Likewise a model run could be done reducing loads by assumption that 250 MW of incremental EE will develop over time. In this case the model runs show a remaining need of 250 MW. *In reality, both cases have the same need and both cases look to uncommitted EE to solve the same portion of the need*."[48]

Mr. Anderson further illustrated the point during the evidentiary hearing, observing that "[i]f you put 50 MW [of DR] before the model run, the need comes out 50 MW lower. If you don't put any in, the need is 50 MW higher and you can say you are going to meet 50 with demand response. You end up at the same place."[49] As discussed below, SDG&E's analysis treated certain preferred resources as load reductions and others as potential solutions to meet LCR; however, in accordance with the State's Loading Order, SDG&E's procurement strategy takes account of all preferred resources.

Mr. Anderson also explained that since a particular resource could be analyzed as a base assumptions <u>or</u> as a solution to meeting LCR need, it is important to avoid double-counting the same resource. As Mr. Anderson pointed out, "SDG&E's case includes a base assumption of 408 MW of load reduction and an increase in supply from

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[47] *Id.* at pp. 6-7.

[48] SDG&E/Anderson, Exh. SDG&E-1, p. 10 (emphasis added). Figures cited are illustrative. *Id.*, note 8.

[49] SDG&E/Anderson, Tr. Vol. 12, 1867:4-10.

incremental preferred resources (from current levels) . . . [I]f it is assumed that a particular preferred resource will have higher increment of availability, and this higher increment of availability is included as a base assumption to reduce load and to establish the resulting LCR need, the same increment of resource availability cannot be proposed as a solution to meeting that LCR need; *i.e*., each dependable megawatt can only be counted once."[50/] He provided the following illustrative example, "consider a base assumption that 20 MW of CHP generation will be added and that the load presented to the transmission grid will, as a result, be reduced by 20 MW. Now, if there is an LCR need of 400 MW after taking into account forecast load and forecast reductions to load (including the 20 MW of CHP) that same 20 MW of CHP cannot be proposed as a resource to meet the 400 MW LCR need."[51/]

(a) Load Assumptions

SDG&E's analysis relies on the load forecast for the entire SDG&E service area from the 2012 Integrated Energy Policy Report ("IEPR") prepared by the California Energy Commission ("CEC"). The load assumption used by SDG&E is identical to the load assumption included in the 2012 LTPP planning assumptions adopted in the Ruling. For transmission studies, the 90/10 load forecast is used.[52/] The analysis assumes the following load reductions:

- *Energy Efficiency*: SDG&E assumed 338 MW of EE peak reductions on a hot summer peak load basis ("dependable" peak reduction).[53/] Specifically, SDG&E reduced the load by the mid-case forecast for uncommitted EE amounts adopted

50/ SDG&E/Anderson, Exh. SDG&E-1, pp. 9-10 (emphasis in original).
51/ *Id.* at p. 10. Figures cited are illustrative. *Id.*, note 8.
52/ *Id.* at p. 6.
53/ *Id.* at p. 10.

in the 2012 LTPP planning assumptions. The amount of uncommitted EE in the mid-case forecast is based on expected (1-in-2) weather conditions. The impact of this EE during peak load hours was increased to account for estimated impacts during a hot 1-in-10 weather condition. This is the weather condition used in the CAISO's assessment of LCR.[54/]

- *Roof Top Solar (Behind the Meter)*: SDG&E assumed 167 MW of incremental roof top solar on an installed capacity basis (over the level achieved by July 2013) in order to achieve an estimated dependable load reduction of 96 MW.[55/] The CEC load forecast assumed 286 MW of rooftop solar will be installed resulting in a reduction in peak demand of 186 MW. SDG&E's base case assumed an additional 65 MW of installed solar capacity, reducing the peak load by additional 30 MW to account for greater amounts of rooftop solar than were included in the original forecast.[56/] Thus, the case assumed a total of 351 MW, as compared with the approximately 184 MW installed today.[57/]
- *CHP (Behind the Meter)*: SDG&E assumed a load reduction of 20 MW of additional CHP.[58/]
- *Demand Response*: SDG&E did not include demand response as a load reduction in the base case since it was not clear what demand response programs would meet CAISO local capacity requirements and where it would be located.[59/]

54/ SDG&E/Anderson, Exh. SDG&E-1, p. 6.
55/ *Id.* at p. 11.
56/ The CEC used 65% as the peak load to installed capacity factor in its forecast. SDG&E used the same peak load factor of 46% of nameplate as the Commission included in the Track 4 assumptions. *Id.* at p. 7.
57/ *Id.* at pp. 6-7.
58/ *Id.* at p. 7.
59/ *Id.*

However, demand response is a potential solution to meet the identified LCR need.[60/] As Mr. Anderson explained during the evidentiary hearing, SDG&E has approximately 20 MW of DR that might meet the operational characteristics for DR that are expected to eventually be set by the CAISO, but the CAISO has not yet defined those operational characteristics or approved reliance on these 20 MW of DR to meet SDG&E's LCR need.[61/]

Table 1 in Mr. Anderson's testimony summarizes the major load assumptions used by SDG&E to develop the total system load that was modeled.[62/]

Table 1

Input	Source	2022 Value (MW)
Load	CEC 90/10 forecast	6056
Uncommitted Energy Efficiency	CEC Mid Case (grossed up)	(338)
Incremental Roof Top PV	SDG&E Estimate	(30)
Demand Response	SDG&E Estimate	(0)
Incremental CHP	SDG&E Estimate	(20)
Load (including losses)[63/]		5668

(b) Supply-Side Assumptions

SDG&E generally used the adopted planning assumptions for supply resources located in the San Diego area load pocket with several revisions.[64/] The changes in resources used in the studies are outlined below:

60/ SDG&E/Anderson, Exh. SDG&E-1, p. 11.
61/ SDG&E/Anderson, Tr. Vol. 12, 1857:3-6; *see also* Tr. Vol. 12, 1800:24 – 1801:4.
62/ SDG&E/Anderson, Exh. SDG&E-1, p. 7, Table 1.
63/ The total load includes losses of 185 MW. The transmission models use the load net of losses, which would be 5,483 MW, and then calculates losses which will vary depending on the generation and transmission additions and simulated system conditions. *Id.*, note 4.
64/ *Id.* at p. 8.

- *New Generation*: SDG&E included in the case the dependable capacity associated with the application SDG&E had before the Commission at the time the planning work started. This included the Wellhead Escondido repower at 45 MW (approved in D.13-03-029) and the Pio Pico Plant at 300 MW (currently before the Commission in A.13-06-015). The Quail Brush plant at 100 MW was used as a possible plant to meet identified needs.[65/]
- *New Renewable Generation*: SDG&E included 20 MW of dependable capacity at time of the afternoon peak from new local solar based on installed capacity of 50 MW in the load pocket. This was developed based on assessment of the existing contacts and renewable energy programs.[66/]
- *OTC Retirements*: SDG&E assumed all 964 MW of dependable capacity at the Encina power plant would be retired, including the 14 MW combustion turbine at the site that does not use OTC.[67/]
- *Non-OTC Retirements*: SDG&E retired the existing 35 MW Wellhead Escondido plant, since it is being replaced in total as indicated above, as well as 188 MW of older combustion turbines known as the Cabrillo II units.[68/]
- *CHP Retirements*: SDG&E assumes that 88 MW of local CHP units will be retired. There resources are made up of three units that are located on military bases in San Diego. The contracts related to these resources will expire in 2019 and SDG&E does not anticipate their renewal.[69/]

65/ *Id.*

66/ *Id.*

67/ SDG&E/Anderson, Exh. SDG&E-1, p. 8.

68/ *Id.* A 1-2 year extension of the license agreement with the Cabillo II units has been requested in Advice Letter 2533, however it is anticipated that the units will retire prior to 2022.

69/ SDG&E/Anderson, Exh. SDG&E-1, p. 9.

Table 2 of Mr. Anderson's testimony summarizes the supply-side assumptions regarding resource additions and retirements.[70/]

TABLE 2

Input	Source	2022 Value (MW)
New Generation	Included Pio Pico, and Wellhead Escondido	345
New Renewable Generation	SDG&E Estimate	20
OTC Retirements	Encina (includes GT)	(964)
Non-OTC Retirements	Cabrillo II and existing Wellhead Escondido	(223)
CHP Retirements	Retired units with expiring contracts	(88)
Net Change in Local Resources		(910)

(c) Procurement of Energy Storage

In its opening testimony submitted in Track 4 of the instant proceeding, SDG&E requested authority to procure supply-side resources, including, *inter alia*, ES resources.[71/] Subsequent to submittal of SDG&E's opening testimony, the Commission adopted a decision in the dedicated ES proceeding, D.13-10-040 (the "ES Decision"). The ES Decision establishes an Energy Storage Framework and Design Program and sets an ES procurement target for SDG&E. Given the Commission's action in D.13-10-040, SDG&E proposed in comments filed in the instant proceeding on September 30, 2013 that procurement of ES resources should occur through the separate process contemplated in the ES PD rather than through the supply-side RFO or bilateral procurement proposed by SDG&E in this proceeding.[72/] In accordance with this proposal, Mr. Anderson

70/ *Id.*, Table 2.
71/ *Id.* at p. 5.
72/ SDG&E Comments, *supra*, note 11, p. 3.

amended his testimony to reflect SDG&E's proposal that ES procurement be undertaken through the dedicated ES proceeding and that the Commission authorize in this Track 4 procurement of 500-550 MW of conventional or renewable generation resources.[73/]

There are many issues related to ES procurement that require resolution, including the operational characteristics that ES must satisfy in order to be relied upon to meet LCR need. Mr. Anderson noted that "some amount of ES – the right kind of ES at the right locations – may play a role in meeting some of SDG&E's identified LCR need."[74/] He noted, however that ES procurement undertaken in order to meet to targets adopted in the dedicated ES proceeding may or may not be procurement capable of meeting LCR need.[75/] He observed, for example, that ES procured by SDG&E might not be located in the local capacity area, and might not meet duration requirements established by the CAISO.[76/] He also pointed out that 30 MW of the ES procurement target proposed for SDG&E is for customer applications and that customers may elect to use ES to increase participation in DR programs; thus, he explained "counting on growth in DR to meet LCR need while separately counting on customer-side ES to meet LCR need may very well be double-counting the same storage capacity."[77/] Accordingly, the ES targets adopted in D.13-10-040 cannot be assumed to count toward LCR need on a megawatt-for-megawatt basis.

As discussed above, SDG&E's procurement strategy leaves 70-120 MW of local need open to be filled with preferred resources such as ES. Given the rather prescriptive method, application, and timing that the Commission is proposing in the storage PD, it

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73/ SDG&E/Anderson, Tr. Vol. 12, 1793:8-10; 1793:26-27.
74/ SDG&E/Anderson, Exh. SDG&E-2, p. 1.
75/ *Id.* at p. 2.
76/ *Id.*
77/ *Id.* at pp. 2-3.

now appears to be preferable for all storage to be procured in the context of the dedicated ES proceeding and dedicated ES RFO. Accordingly, SDG&E recommends that all ES be procured via the Storage OII process and local need reduced only to the extent ES is shown to meet local need. As discussed in Section V below, the public interest is served by requiring preferred resources to be procured in the dedicated Commission proceeding relevant to each such resource.

(ii) Reliability Criteria Applied in the Track 4 Analysis

(a) Applicable System Planning Standards

Pursuant to § 215 of the Federal Power Act (the "FPA"), the Federal Energy Regulatory Commission ("FERC") has granted NERC the legal authority to enforce reliability standards applicable to the owners and operators of the bulk power system in the United States.[78/] Under FPA §§ 215(d) and (e), reliability criteria that are developed by the NERC and approved by FERC become mandatory and legally enforceable.[79/] The WECC is the Regional Entity recognized by NERC as responsible for coordinating and promoting Bulk Electric System reliability in the Western Interconnection.[80/] It is responsible for certifying compliance with NERC planning standards and has the authority to impose reliability criteria that are more stringent than those imposed by NERC. The CAISO is the Transmission Planning Authority for the San Diego

78/ *See* Energy Policy Act of 2005 (Pub.L. 109–58), § 1211, adding § 215 to the Federal Power Act. FPA § 215 is codified at 16 USC § 824o. In July 2006, the Commission issued an order certifying NERC as the Electric Reliability Organization ("ERO") for the United States. *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062 (2006), *order on reh'g and compliance*, 117 FERC ¶ 61,126 (2006), *order on compliance*, 118 FERC ¶ 61,030 (2007), *order on clarification and reh'g,* 119 FERC ¶ 61,046 (2007).

79/ 16 USC §824o(d) and (e).

80/ *See id*. at §824o(a)(7) and (e)(4). In April 2007, the FERC approved delegation agreements between the NERC and eight Regional Entities, including a delegation agreement between the NERC and the WECC. *North American Electric Reliability Corp.*, 119 FERC ¶ 61,060, *order on reh'g*, 120 FERC ¶ 61,260 (2007).

transmission system.[81/] It is responsible for implementation of the minimum planning criteria established by WECC and/or NERC, and has the authority to exceed those minimum planning criteria where appropriate.[82/] Compliance with the CAISO's reliability criteria, standards, and procedures is mandatory for SDG&E.[83/]

The mandatory reliability criteria and planning standards established by NERC, WECC and the CAISO are intended to ensure that electric systems are designed to meet projected load growth, prevent overloads and cascading outages, and maintain service reliability over a wide range of operating conditions.[84/] Mandatory NERC standards define acceptable performance levels for different categories of system events, including:

- *Category A* – System Performance Under Normal Conditions[85/]
- *Category B* – System Performance Following Loss of a Single Bulk Electric System Element ("N-1")[86/]
- *Category C* – System Performance Following Loss of Two or More Bulk Electric System Elements ("N-1-1")[87/]
- *Category D* – System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements ("N-2")[88/]

As Mr. Jontry testified, under the current deterministic approach to contingency analysis, every conceivable N-1, G-1/N-1 and N-1-1 overload must be studied and mitigated, regardless of the probability of its occurrence.[89/] The CAISO and SDG&E

81/ CAISO Fifth Replacement FERC Electric Tariff; *see also,* 16 USC §824o(a)(6); Pub. Util. Code § 345; SDG&E/Jontry, SDG&E-Exh. 4, p. 4.
82/ CAISO Fifth Replacement FERC Electric Tariff, § 7.3.2.
83/ *Id.* at § 7.3.1.
84/ SDG&E/Jontry, Exh. SDG&E-4, p. 3.
85/ NERC Standard TPL-001-0.1.
86/ NERC Standard TPL-002-0b.
87/ NERC Standard TPL-003-0b.
88/ NERC Standard TPL-004-0a.
89/ SDG&E/Jontry, Exh. SDG&E-4, p. 3; Tr. Vol. 12, 1736:22 – 1737:2. Category D events such as the N-2 contingency must be studied and monitored, but do not require mitigation. NERC Standard TPL-004-0a; *see also* CAISO/Sparks, Tr. Vol. 10, 1482:16-19.

must study potential methods for preserving system reliability assuming occurrence of multiple critical contingencies on a high load day, such as during the summer high peak period.[90/] The reliability criteria gauge system performance following a contingency event to measure system performance.[91/] The "worst" contingency – *i.e.*, the contingency that results in the most severe system impact – becomes the "limiting" contingency that is used in the long-term planning context to determine whether additional resources and/or system enhancements are required in order to preserve system reliability.[92/]

Mr. Jontry testified that the system condition that determined the generation need in this case is the overlapping outage (N-1-1) of the ECO-Miguel section of the Southwest Powerlink 500 kV line and the Ocotillo Express-Suncrest section of the Sunrise Powerlink 500 kV line.[93/] For the analysis that examined this contingency, it was assumed by SDG&E that a load shedding Special Protection Scheme ("SPS") would not be permitted, consistent with current CAISO planning criteria.[94/] The results of the analysis using the N-1-1 reliability criteria with no allowable load shedding indicate an LCR need of between 620 – 1470 MW.[95/]

For purposes of comparison, Mr. Jontry's testimony also included a discussion of the analysis that examined the worst G-1/N-1 as the limiting contingency.[96/] In the G-1/N-1 analysis, load shedding was assumed to be in place to mitigate the N-1-1; if load shed is used to mitigate the N-1-1, the G-1/N-1 becomes the worst, and therefore

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90/ SDG&E/Jontry, Exh. SDG&E-4, p. 3.
91/ *Id.*
92/ CAISO/Sparks, Tr. Vol. 11, 1571:14-18.
93/ SDG&E/Jontry, Exh. SDG&E-3, p. 3. The term "N-1-1" refers to an "overlapping" or sequential outage in which one element is lost, there is time for the system to be readjusted (within 30 minutes), and then a second element is lost. CAISO/Sparks, Exh. ISO-2, p. 10.
94/ SDG&E/Jontry, Exh. SDG&E-3, p. 6.
95/ *Id.* at p. 11, Table 2.
96/ *Id.* at pp. 6-7.

limiting, contingency. The results of the analysis using the G-1/N-1 reliability criteria indicate an LCR need of between 370 – 1320 MW.[97/] Thus, the difference in resource requirements between the N-1-1 contingency and the G-1/N-1 contingency is only 150-250 MW.[98/]

As Mr. Jontry explained, SDG&E presented the results of both the N-1-1 analysis (assuming no load shed) and G-1/N-1 analysis (assuming load shed to mitigate the N-1-1) to highlight the "relatively modest difference" in the need for new resources under the two sets of planning criteria.[99/] He observed further that "[t]o provide a sense of proportion, 150 MW of additional generation represented less than 3% of the forecast peak load in the San Diego area . . ."[100/] Mr. Jontry noted that "the studies were intended to provide a frame of reference for the Commission's consideration of the impact of each set of criteria, and to attempt to address concerns that the impact of the stricter [N-1-1 with no load shed] criteria would be to require many hundreds or even thousands of megawatts of additional generation in the San Diego load center."[101/]

As the studies make clear, reliance for long-term planning purposes on the stricter N-1-1 with no load shed criteria does *not* significantly increase the need for new local resources in the San Diego sub-area – prohibiting load shed in the N-1-1 contingency adds only 150-250 MW to the local need, but prevents load shed of 500-1000 MW.

97/ *Id.* at p. 11, Table 2.

98/ While Mr. Jontry referred in his prepared direct testimony to a finding by CAISO that adherence to N-1-1 criteria without load shedding increased the LCR requirement for the San Diego LCR by over 1000 MW (SDG&E/Jontry, Exh. SDG&E-1, p. 7), he clarified during the evidentiary hearing in response to questing by Commissioner Florio that that the analysis to which he referred was an initial study that is no longer applicable in light of approved transmission projects, and that the correct calculation is the 150 MW referenced in his Table 2. SDG&E/Jontry, Tr. Vol. 11, 1714:25-1715:15.

99/ SDG&E/Jontry, Exh. SDG&E-4, pp. 2-3.

100/ *Id.* at p. 3.

101/ *Id.*

Despite this fact and notwithstanding the obvious disadvantages to relying on load shed as a mitigation in long-term system planning (discussed in more detail below), parties in Track 4 have suggested to the Commission that load shed is a reasonable long-term system planning tool and urged it to determine new resource needs accordingly.[102/]

While development of system reliability criteria (including rules for use of load shedding) is primarily the domain of NERC, WECC and the CAISO, action taken by the Commission regarding authorization of procurement of new resources can, as a practical matter, indirectly dictate the mitigation used to address a particular contingency on the system. In the case of load shed, for example, if the system has inadequate local resources, it would be necessary to assume reliance on load shed for long-term planning purposes, notwithstanding the CAISO's determination that load shed to mitigate the N-1-1 contingency event at issue here is not prudent. As CAISO witness, Mr. Millar, explained during the evidentiary hearing, "I don't think the Commission itself is tasked with, quote, deciding where a load drop is allowed. But it is an input as to how much generation the Commission procures. The ISO has backstop capability, but if resources aren't caused to be built in the first place, there wouldn't be anything for the backstop capability to draw on."[103/]

Thus, the Commission's failure to authorize in a timely manner the new resources necessary to mitigate the N-1-1 of ECO-Miguel and Ocotillo Express-Suncrest 500 kV lines would result in imposition of a *de facto* requirement that SDG&E rely on load shed as a long-term mitigation of that contingency. As explained above, such reliance is highly imprudent and contrary to the public interest. Accordingly, the Commission

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[102/] *See, e.g.,* CEJA/May, Exh. CEJA-1, pp. 34-36; SC/Powers, Exh. SC-2, pp. 1-2.
[103/] CAISO/Millar, Tr. Vol. 11, 1683:26 – 1684:1.

should reject parties' request that it take on the role of system planner and, in effect, overrule the CAISO's determination regarding the reliability criteria that should apply to the transmission system. Overriding the limitation established by the CAISO on use of load shed as a mitigation in long-term planning would undermine regulatory certainty; it would also cause harm to the public interest to the extent the Commission's indirect exercise of jurisdiction over system planning standards ultimately led to a major event on the system.

(b) *Reliance on Load Shed in Long-Term System Planning*

It is important that the procurement determination made by the Commission in this proceeding recognize the significant harm caused to utility customers by reliance for long-term planning purposes on load shedding to mitigate the N-1-1 at issue in this case. While, NERC reliability standards specify that for a Category C contingency such as an N-1-1, controlled load shedding "may be necessary" to maintain the overall reliability of the interconnected transmission systems, this fact signifies neither that load shedding is required, nor that it is the optimal solution to mitigate Category C contingencies; it is simply the minimum allowable performance requirement for system planning.[104/] The suitability of load shed as mitigation for a particular contingency event must be determined on an *ad hoc* basis, taking into account the magnitude of the impact of load shedding on customers and communities.[105/] It is clear that while reliance on load shedding to mitigate the N-1-1 contingency at issue in this proceeding may be unavoidable on a short-term basis, the long-term planning for the system should not assume or rely on load shed as mitigation for the relevant N-1-1.

104/ SDG&E/Jontry, Exh. SDG&E-4, p. 5.
105/ *Id.* at pp. 2, 5.

SDG&E currently has a WECC-certified load shed SPS in place as a short-term mitigation tool for the N-1-1 of the Southwest Powerlink and the Sunrise Powerlink.[106/] As Mr. Jontry explained, the SPS "came about really as a short-term mitigation to get through the summer of 2012 in the absence of SONGS. It's now become basically our operating standard … because of SONGS permanent retirement. But it came about initially as an operating stopgap to get through the summer of 2012."[107/] He noted that SDG&E agrees with CAISO's view that while controlled load shed might be appropriate as short-term mitigation or in specific, localized instances, it is not prudent to assume reliance on a load shed SPS for long-term system planning.[108/] He explained the distinction in terms of SDG&E's obligation to plan the system to serve *all* of its load rather than placing some of it at risk:

> So we feel that there are situations in the short term where use of an SPS is acceptable. We don't feel that it's acceptable as a long-term mitigation. We feel that we should plan to serve -- ultimately plan to serve all of our load and not allow some of it to be at risk in ten years because we don't have sufficient resources or sufficient transmission.[109/]

He explained further that "short-term" mitigation does not involve a fixed time-frame, but rather is the period of time it takes to establish a permanent solution.[110/] CAISO witness Millar similarly testified with regard to use of load shed as an interim mitigation that the system planning objective would be "to get the best overall solution

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[106/] SDG&E/Jontry, Exh. SDG&E-3, p. 7; Tr. Vol. 12, 1720:26 – 1721:1, 1752:19-28.
[107/] SDG&E/Jontry, Tr. Vol. 11, 1720:26 – 1721:5.
[108/] SDG&E/Jontry, Exh. SDG&E-4, pp. 5-6.
[109/] SDG&E/Jontry, Tr. Vol. 11, 1709:27 – 1710:7; *see also* SDG&E/Jontry, Tr. Vol. 12, 1755:6-14 ("as a short term operating sort of mitigation, we accept that load shedding is sometimes necessary . . . [b]ut in the long-term, the 10-year window we are talking about in this proceeding, we don't want to plan the system to have to rely on load shedding. We want to be able to serve all the load all the time.").
[110/] SDG&E/Jontry, Tr. Vol. 11, 1720:26 – 1721:5.

implemented as quickly as possible and keep the interim period to a minimum."[111/]

Commissioner Florio aptly summarized the distinction between reliance on load shed as a short-term operational mitigation versus a long-term planning assumption in an exchange with CAISO witness Millar:

> COMMISSIONER FLORIO: It seems like it is a little bit like the situation with the once-through cooling units. That we plan not to have to rely on them, but in a pinch, for a limited period of time, we might be able to, but we are not going to count on that to plan?
>
> MR. MILLAR: Right.[112/]

Mr. Jontry explained that SDG&E's load shed SPS involves controlled shedding of up to 1000 MW of load in 500 MW blocks along Path 44 – which would cause a widespread power outage in the densely-populated northern, coastal area of San Diego – and phased restoration of service to critical infrastructure, hospitals, police stations, etc., with rotating outages to other parts of the service area.[113/] He noted the practical impossibility of "surgically" dropping load or dropping it in increments smaller than 500 MW to mitigate the N-1-1 contingency, "load shedding in the event of a contingency, severe contingency like that, is sort of a blunt instrument to start with and has to happen very quickly. So we have to make sure that we are shedding not *just* enough load, but we're basically dropping enough customers to ensure that we have shed enough load to

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[111/] CAISO/Millar, Tr. Vol. 11, 1615:2-5.
[112/] Tr. Vol. 11, 1685:21-27.
[113/] SDG&E/Jontry, Tr. Vol. 12, 1720:26 – 1721:5; 1741:17-28.

avoid voltage collapse."[114] He observed further that the 500 MW blocks are "about as small as we can get it in order to make sure we can mitigate the contingency," and that it would not be prudent to load drop in blocks smaller than 500 MW.[115]

Implementation of SDG&E's load shed SPS would have a major, negative impact on SDG&E customers. As Mr. Jontry pointed out, "the amount and types of load that would be dropped would result in potentially severe economic and civil consequences. Not only would there be direct and indirect economic losses as a result of a power outage, there could be a wide-range of adverse civil consequences given that the outages would take place in densely populated urban areas."[116] The harm potentially caused to the public by an extended blackout in the densely-populated north coastal area of San Diego is obvious.[117] While, as noted above, NERC criteria do not prohibit load shed in an N-1-1 contingency, the appropriateness of load shedding as mitigation for a particular contingency event must be determined on a case-by-case basis based upon the magnitude of the impact of load shedding on customers.[118]

Here, it is clear that reliance on the load shed SPS to mitigate the relevant N-1-1 event is a last resort option and certainly not one whose availability should be assumed for long-term planning purposes. Indeed, as Mr. Millar observed, "we do need to reiterate the sensitivity of 500 megawatts of perhaps up to half a million people being put

[114] SDG&E/Jontry, Tr. Vol. 12, 1742:15-23 (emphasis added); see also, CAISO/Sparks, Tr. Vol. 10, 1443:26 – 1444:5 ("[G]iven the design in load shed and the fact that you don't want to come up short on the load shedding and the load fluctuates over the load cycle throughout the day, you would tend to need to over trip generation or load, whatever it is, with an SPS to make sure you don't fall short.").
[115] SDG&E/Jontry, Tr. Vol. 12, 1743:17-23.
[116] SDG&E/Jontry, Exh. SDG&E-4, p. 2.
[117] *See, e.g.*, SDG&E/Jontry, Tr. Vol. 12, 1739:12 – 1740:23, 1757:4-8; CAISO/Sparks, Tr. Vol. 10, 1476:20 – 1477:1.
[118] SDG&E/Jontry, Exh. SDG&E-4, p. 5.

on load shedding arrangement where there is no other option available depending on the operating conditions . . . So I think the in this case clearly the last resort qualifier that we've mentioned would be important."[119/] Mr. Millar also described the significant harm to the system itself potentially caused by implementation of the load shed SPS:

> I think there are also then system issues that have to be considered in instantaneously shedding that amount of load. We are not talking about a gradual[] ramp-down. We are talking about systems that should have that load dropped from the system in under a quarter of a second. So that also sets up impacts on the system that at times are not without consequence. And it is also happening at a time when the system has already been weakened by the initial disturbances.[120/]

CAISO witness, Mr. Sparks, highlighted the infirmities of a system that relies on load shed as mitigation in the long-term system planning context. He explained that if a system is designed to rely on load shed as mitigation and a situation arises wherein load growth is greater than expected, some other assumption proves wrong or some other circumstances occurs that results in the need to shed load, "[i]f you start out *planning* for load shed and then you get into that situation, now the amount of load shedding becomes excessive . . ."[121/] In other words, there is risk in assuming that in a circumstance in which a load shed SPS is applied, no other mitigation will be required, or as Mr. Millar described it, "the very optimistic assumption that everything else in the grid that matters is available and works perfectly when called upon."[122/] He observed that "in looking at the benefit of mitigation, we not only need to look at the particular stressed condition *but also the other conditions that could arise*."[123/]

[119/] CAISO/Millar, Tr. Vol. 11, 1615:11-19.
[120/] CAISO/Millar, Tr. Vol. 11, 1681:11-22.
[121/] CAISO/Sparks, Tr. Vol. 10, 1496:13-16 (emphasis added).
[122/] CAISO/Millar, Tr. Vol. 11, 1625:19-22.
[123/] CAISO/Millar, Tr. Vol. 11, 1625:9-12 (emphasis added).

Plainly, it is not prudent to take a long-term system planning approach that assumes reliance on load shedding in a densely-populated urban area as mitigation for contingency events. This approach would undermine the robustness of California's electric grid and would impair the State's ability to meet the growing needs of its residents. As Mr. Jontry observed, "[g]iven the significant negative impact on customers, communities and the region's economy, it is not acceptable for the State's long-term transmission planning process to rely on a major disruption of electric service to customers as a solution, when in fact there are alternate solutions, including preferred and conventional resources and transmission infrastructure, that can help to ensure a reliable grid."[124/]

The harm to the public interest caused by long-term system planning that "bakes in" reliance on load shedding to meet the N-1-1 at issue here is particularly egregious when considered in light of the limited off-setting benefit of doing so. Forcing SDG&E to rely on load shedding to mitigate the relevant N-1-1 accomplishes little in terms of avoiding the need for new local resources. As discussed above, the difference in terms of resource need between the N-1-1 with no load shed scenario, and the G-1/N-1 that assumes load shed to mitigate an N-1-1, is only 150-250 MW. In other words, by procuring an additional 150-250 MW of resources, it is possible to avoid shedding 500-1000 MW of load. Thus, the Commission should reject the suggestion by parties to this proceeding that it withhold approval for interim procurement of new resources and, in effect, overrule the CAISO's determination that reliance on load shed to mitigate the N-1-1 at issue here should not be permitted for long-term system planning.

[124/] SDG&E/Jontry, Exh. SDG&E-4, p. 6.

V.
PROCUREMENT OF EE, DR AND ES SHOULD BE UNDERTAKEN IN THE RELEVANT DEDICATED COMMISSION PROCEEDINGS

During the evidentiary hearing held in the proceeding, Mr. Anderson explained SDG&E's general view that it is preferable to procure resource such as EE, DR and ES through the relevant dedicated proceeding rather than through authorization issued in the LTPP proceeding. Mr. Anderson highlighted the pitfalls of going down "two different paths, trying to get the same thing at the same time."[125] In an exchange with Commissioner Florio, he explained the risk of double-counting and cannibalizing existing programs that arises when procurement of preferred resources occurs along two parallel paths:

> COMMISSIONER FLORIO: On page 4 of your direct testimony you suggest that energy efficiency and demand response be pursued in the context of the specific dedicated proceedings and not included as eligible resources for your request for offers. Has SDG&E in the past included demand responses, [as an] eligible product in some of its resource solicitations?
>
> MR. ANDERSON: We did, and I think it was in like 2007, 2009 we did ask for some demand response in an RFO.
>
> COMMISSIONER FLORIO: And some contract[s were] signed as a result of that, weren't they?
>
> MR. ANDERSON: As a result of one of them a contract was signed.
>
> The reason we are not recommending doing that again was that the contract that got signed, what we found is after we signed it and they went out and implemented the contract, [was that] more than 50 percent of the load that they got under the contract came from customers that were already part of other demand response programs. So although we were trying to get incremental demand response, what we were really doing is cannibalizing the existing demand response programs.

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[125] SDG&E/Anderson, Tr. Vol. 12, 1814:26-28.

> We think it is better if we are going to do demand response, let's do it all at one place so we know we are truly getting incremental demand response rather than just paying more money for customers to move to a new program.[126]

Mr. Anderson pointed out, in addition, that the DR contract in question "ended up basically taking up load from the other programs. And even though it was a 10-year contract, it ended up cancelling after a year or so."[127]

Although the above discussion relates to procurement of DR resources, Mr. Anderson's observations apply equally to DR, ES and EE. SDG&E submits that the public interest is best served by procurement of preferred resources through the relevant dedicated Commission proceeding. There are important issues that require stakeholders input that are best addressed in the dedicated proceeding, such as establishing rules for counting of such resources to meet overall procurement targets, separate from LCR need, and developing mechanisms for recovery of costs from all benefitting customers. Mr. Anderson also highlighted in his testimony the changing "net load" shape and the impact of this change on the ability of different resources to meet RA needs. He observed that "[a]s more solar is added to the system, both behind the meter roof top applications and to meet Renewable Portfolio Standards (RPS) program requirements, the grid is experiencing a shift where the need for new resources is being driven by evening loads."[128]

Mr. Anderson noted that "[t]his shift in the time period that will drive need for incremental resources has major resource planning implications."[129] He recommended that "as the Commission considers expansion of EE and DR programs, it must consider

[126] SDG&E/Anderson, Tr. Vol. 12, 1812:24 – 1813:28.
[127] SDG&E/Anderson, Tr. Vol. 12, 1869:12-15.
[128] SDG&E/Anderson, Exh. SDG&E-1, pp. 14-15.
[129] *Id.* at p. 15.

the effectiveness of programs that reduce loads in both the afternoon *and* evenings [since] EE program peak reductions are currently calculated based on expected peak reductions only during the afternoon hours of 2:00 – 5:00 PM [and] DR programs have generally focused on afternoon hours and their impact at that time."[130] Given the continuing shift in peak load period, it is important to develop programs to reduce load during *both* afternoon and evening hours. This effort is best undertaken in the context of the dedicated Commission proceeding where EE and DR programs tailored to meet changing need can be developed with stakeholder input. Accordingly, the Commission should direct that procurement of preferred resources be undertaken in the relevant dedicated Commission proceedings.

VI.
THE COMMISSION SHOULD ALLOCATE THE COST OF NEW LOCAL RESOURCES AUTHORIZED IN THIS TRACK TO ALL CUSTOMERS IN SDG&E'S SERVICE AREA

Public Utilities Code § 365.1(c)(2)(A)-(B) requires that upon a Commission determination that new generation is required to meet local or system area reliability needs for the benefit of all customers in an IOU's service area, the net capacity costs for the new capacity must be allocated in a fair and equitable manner to all benefitting customers, including DA, CCA and bundled load customers.[131] In other words, if new generation resources provide reliability benefits to all customers, the net capacity costs of such resources must likewise be allocated to all customers. As the Commission made clear in D.11-05-005, application of the CAM is mandatory where the statutory conditions are met.[132]

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[130] *Id.* at p. 16 (emphasis in original).
[131] *See* D.13-02-015; D.11-05-005; D.08-09-012; D.07-09-044; and 06-07-029.
[132] D.11-05-005, *mimeo*, p. 6.

In determining applicability of the CAM to authorized procurement, it is important to recognize and distinguish between an IOU's obligations as a load-serving entity ("LSE") to procure energy and capacity to serve its bundled customers versus its obligation as a regulated IOU to ensure that new resources are built in order to meet long-term grid reliability needs. In its role as an LSE procuring energy and capacity to serve its bundled customers, SDG&E's procurement activity provides a benefit only to it bundled customers. In its role as a regulated IOU procuring new resources to ensure grid reliability, on the other hand, SDG&E's procurement activity provides a benefit to *all* customers in SDG&E's service area.

As Mr. Anderson observed, the need for new resources to replace SONGS capacity is driven by system reliability concerns rather than a need for energy and capacity to serve SDG&E's bundled customers; thus, it is procurement that must be subject to the CAM:

> SDG&E, as the LSE for its bundled customers, must replace the energy and capacity that it previously received from SONGS. However, SDG&E is free to procure that capacity and energy from any resource that meets its needs, including existing resources. It would not be unusual for an LSE to contract with one resource to meet a portion of its energy and capacity needs for one year and then contract with a different resource the following year. In other words, there is no ongoing obligation to procure from a particular resource after a power purchase agreement (PPA) has expired. Likewise, if a resource that previously sold its capacity and energy to a party (or group of parties) ceases operation, the part(ies) that previous contracted with that resource have no direct obligation to ensure that a new resource is built in its place. Thus, in its role as the LSE for its bundled customers, SDG&E has no obligation to ensure that new resources are built to replace SONGS.
>
> If, however, the Commission authorizes SDG&E and/or Southern California Edison Company (SCE) as regulated utilities to procure new capacity in order to meet the long-term grid reliability needs

> identified in this Track 4 proceeding, it is ordering the regulated utility to ensure that new resources are built for the benefit of all customers.[133/]

In the latter scenario, § 365.1(c)(2)(A) would require the Commission to allocate the net capacity costs of such new resources to all benefiting customers. The Commission has consistently applied the CAM to allocate costs of new resources necessary to meet LCR need to benefitting customer. In D.13-03-029, for example, the Commission authorized SDG&E to recover the capacity costs of the Wellhead Escondido Power Purchase and Tolling Agreement ("PPTA") from all bundled service, DA and CCA customers in SDG&E's service territory on a non-bypassable basis consistent with the CAM.[134/] Similarly, in the Commission's Track 1 decision, it directed SCE to allocate costs incurred as the result of procurement authorized in Track 1 by SCE in accordance with the CAM.[135/]

As discussed in Section II above, the objective of the 500-550 MW procurement proposed in the instant proceeding is to ensure that new resources are built for purposes of protecting system reliability. Plainly, *all* customers in SDG&E's service area will benefit from such procurement. Thus, in accordance with its obligation under § 365.1(c)(2)(A)-(B), the Commission should order the net capacity costs of any new local resources procured in accordance with Commission authorization issued in this Track 4 to be allocated to all bundled service, DA and CCA customers in SDG&E's service territory on a non-bypassable basis consistent with the CAM.

133/ SDG&E/Anderson, Exh. SDG&E-2, p. 4 (emphasis in original).
134/ *See also* D.13-03-014, *mimeo*, Ordering Paragraph 15.
135/ D.13-02-015, *mimeo*, Ordering Paragraph 15.

VII.
THE COMMISSION SHOULD DISREGARD THE NON-EXPERT TESTIMONY PRESENTED BY POC

While the Commission has not adopted formal standards related to qualification as an "expert" witness –electing instead to consider on an *ad hoc* basis whether a witness is a qualified expert – it has recognized the definition of "expert" witness set forth in Evidence Code § 720, as well as the definitions of "expert" and "lay" witness contained in Black's Law Dictionary.[136/] Evidence Code § 720 states, in pertinent part: (a) A person is qualified to testify as an expert if he has special knowledge, skill, experience, training, or education sufficient to qualify him as an expert on the subject to which his testimony relates. Black's Law Dictionary defines "lay" and "expert" witnesses as:

> Lay Witness. Person called to give testimony who does not possess any expertise in the matters about which he [she] testifies. Used in contrast to expert witness who may render an opinion based on his expert knowledge if proper foundation is laid. Generally, such non-expert testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness (i.e. first-hand knowledge or observation) and (b) helpful to a clear understanding of his testimony or the determination of a fact at issue. Fed.Evid.R. 701.
>
> Expert Witness. One who by reason of education or specialized experience possesses superior knowledge respecting a subject about which persons having no particular training are incapable of forming an accurate opinion or deducing correct conclusions. [citation] A witness who has been qualified as an expert and who thereby will be allowed (through his/her answers to questions posed) to assist the jury in understanding complicated and technical subjects not within the understanding of the average lay person. One possessing, with reference to a particular subject, knowledge not acquired by ordinary persons. One skilled in any particular art, trade, or profession, being possessed of peculiar knowledge concerning the same, and one who has given subject in question particular study, practice, or observation. One who by habits of life and business has peculiar skill in forming opinion on subject in dispute.[137/]

[136/] *See, e.g.*, D.10-12-057, *mimeo*, p. 12; D.07-04-044, *mimeo*, p. 9; D.83-04-017, 1983 Cal. PUC LEXIS 942, *34.

[137/] D.10-12-057, *mimeo*, p. 12 (citing Black's Law Dictionary, Fifth Edition, at 799 and 519).

In determining whether a witness qualifies as an expert, the Commission considers the relevance of the witness' academic degree(s), publications and work experience to the issues in the proceeding.[138/] On technical issues, where resolution of a disputed fact depends on particular expertise, the testimony of a lay witness is afforded less weight than testimony of an expert witness.[139/] It is abundantly clear that under any definition, Protect Our Communities Foundation ("POC") witness, David Peffer, does not possess the qualifications necessary to testify as an expert witness regarding the transmission system planning issues before the Commission in this proceeding.

In his prepared direct testimony submitted on behalf of POC, Mr. Peffer initially provided no witness qualifications whatsoever. He later submitted a "Statement of Qualifications" indicating that he is a licensed attorney with "three years of utility law experience."[140/] In a subsequent data request, SDG&E asked Mr. Peffer to identify his specific area(s) of expertise and to describe the training and experience that supports Mr. Peffer's qualifications as an expert regarding issues within the scope of Track 4 of this proceeding.[141/] Mr. Peffer responded by referring to his resume, which indicates that in

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[138/] *See, e.g.*, D.07-12-007, *mimeo* pp. 30-31 ("We are unable to conclude [that the witness] qualifies as an expert in renewable energy or solar power because she does not have degrees in energy related fields, her publications do not pertain to renewable energy, and although she has worked for solar companies, her positions were advocacy oriented."); D.07-04-044, *mimeo*, p. 9; D.92-12-062, 1992 Cal. PUC LEXIS 892, *9-10.

[139/] *See, e.g.*, D.10-12-057, *mimeo*, p. 13; D.01-12-021, *mimeo*, p. 27, note 28; D.00-02-046, 2000 Cal. PUC LEXIS 239, *113-114.

[140/] Exh. POC-2, p. 1.

[141/] Exh. SDG&E x POC-1.

addition to his law degree, he received an undergraduate degree in anthropology and that his energy industry experience consists of appearing as legal counsel on behalf of the Utility Consumers Action Network ("UCAN") in three Commission proceedings: A.09-08-020, I.12-10-013 and A.11-05-023.[142/]

Proceeding A.09-08-020 considered the application of SDG&E, SCE, Southern California Gas Company ("SCG") and Pacific Gas & Electric Company ("PG&E") for authority to establish a wildfire expense balancing account to record for future recovery wildfire-related costs. The scoping ruling issued in the proceeding indicates that the issues addressed were of a ratemaking nature and that system planning issues were not considered in the proceeding.[143/] The Commission's docket card for A.09-08-020 establishes that UCAN made three procedural filings in the case; the first was a request for party status and the second two related to UCAN's notice of intent to seek intervenor compensation. It made no subsequent filings in the proceeding, however, and was not an active party in the case.

Proceeding I.12-10-013 is the Commission's investigation into the rates, operations, practices, services and facilities of SCE and SDG&E associated with SONGS Units 2 and 3. The scoping rulings issued in the proceeding indicate that the issues to be addressed are generally related to removal of the value of any portion of the SONGS facility from rate base and potential disallowance of rate recovery of expenses related to

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142/ *Id.* at p. 4. Mr. Peffer also testified during the hearing that he is currently appearing as a witness in proceeding A.13-06-015. POC/Peffer, Tr. Vol. 14, 2224:8-17.

143/ *Scoping Memo and Ruling of the Assigned Commissioner*, issued June 8, 2011 in A.09-08-020, p. 2.

the operation of SONGS.[144] According to the Commission's docket card for I.12-10-013, UCAN submitted two substantive filings in the proceeding, along with a handful of procedural filings. The first of these filings was submitted on January 7, 2013; Mr. Peffer's resume indicates that he left UCAN in April, 2013.[145] Thus, his active participation in the proceeding was limited to a 3-month period.

Finally, proceeding A.11-05-023 considered the application of SDG&E for authority to enter into PPTAs with Escondido Energy Center, Pio Pico Energy Center and Quail Brush Power. While system planning issues similar to those at issue in the instant proceeding were raised in A.11-05-023, Mr. Peffer admitted during cross-examination that he did not focus on or "delve into" those issues.[146] He explained that his involvement in the proceeding was limited to the briefing phase and that he "took over very close to the end of that proceeding [and] was not directly involved in developing UCAN's position, or involved in any of the testimony, or anything like that."[147]

Plainly, Mr. Peffer's claim that he is qualified to appear as an expert witness regarding system planning issues is entirely without foundation. He lacks even the most basic qualifications of an expert in this area, such as an academic degree related to electrical engineering, or relevant training or work experience.[148] While he points to his three years of "utility law" experience as the basis for his claim of expertise on system

[144] *Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge Determining the Scope, Schedule, and Need for Hearing in Phase 1 of this Proceeding*, issued January 28, 2013 in I.12-10-013, p. 2; *Assigned Commissioner's and Administrative Law Judge's Ruling Determining the Phase 2 Scope and Schedule*, issued July 31, 2013 in I.12-10-013, pp. 3-4.

[145] Exh. SDG&E x POC-1, p. 4.

[146] POC/Peffer, Tr. Vol. 14, 2225:26 – 2226:18.

[147] POC/Peffer, Tr. Vol. 14, at 2225:15-19.

[148] *See* Exh. SDG&E x POC-1, p. 4.

planning issues, this assertion is misleading.[149/] First, his claim of experience in handling electric matters is vastly overstated. While he states that he has three years of relevant work experience, it appears that his experience with electric issues of *any* kind is far less than he represents and that he has absolutely no experience with system planning standards or NERC/WECC/CAISO reliability criteria. Moreover, his participation in electricity-related matters has mainly been as counsel in Commission proceedings rather than as a subject matter expert.

While SDG&E does not challenge Mr. Peffer's qualifications as an attorney, it is plain that his witness testimony is lay testimony rather than expert witness testimony. Issues related to the transmission planning analysis and the system impact of adherence to particular reliability criteria are complex and technical; they are not matters of observable fact, appropriate for lay testimony, but are instead matters of subjective opinion requiring specific training and experience to support a credible and persuasive recommendation.[150/] Accordingly, Mr. Peffer's testimony in this proceeding should be treated by the Commission as lay testimony and afforded no weight.

VIII.
CONCLUSION

For the reasons set forth above, the Commission should authorize SDG&E to procure through an RFO or bilaterally 500-550 MW of long lead-time supply-side resources, including conventional generation and/or renewable resources. In addition, the Commission should direct that procurement of preferred resources that meet local capacity needs be undertaken in the relevant dedicated Commission proceedings. Finally, the Commission should order the net capacity costs of any new local resources

[149/] *See* Exh. POC-2.
[150/] *See* D.10-12-057, *mimeo*, p. 13.

procured in accordance with Commission authorization issued in this Track 4 to be allocated to all bundled service, DA and CCA customers in SDG&E's service territory consistent with the CAM established pursuant to § 365.1(c)(2)(A)-(B).

Dated this 25th day of November, 2013 in San Diego, California.

Respectfully submitted,

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