

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

PRELIMINARY STATEMENT

1. These responses and objections are made without prejudice to, and are not a waiver of, SDG&E's and SoCalGas' right to rely on other facts or documents in these proceedings.
2. By making the accompanying responses and objections to these requests for data, SDG&E and SoCalGas do not waive, and hereby expressly reserves, its right to assert any and all objections as to the admissibility of such responses into evidence in this action, or in any other proceedings, on any and all grounds including, but not limited to, competency, relevancy, materiality, and privilege. Further, SDG&E and SoCalGas makes the responses and objections herein without in any way implying that it considers the requests, and responses to the requests, to be relevant or material to the subject matter of this action.
3. SDG&E and SoCalGas will produce responses only to the extent that such response is based upon personal knowledge or documents in the possession, custody, or control of SDG&E and SoCalGas, as set forth in the California Public Utilities Commission ("Commission or CPUC") Rules of Practice and Procedure. SDG&E and SoCalGas possession, custody, or control does not include any constructive possession that may be conferred by SDG&E's and SoCalGas' right or power to compel the production of documents or information from third parties or to request their production from other divisions of the Commission.
4. A response stating an objection shall not be deemed or construed that there are, in fact, responsive information or documents which may be applicable to the data request, or that SDG&E and SoCalGas acquiesces in the characterization of the premise, conduct or activities contained in the data request, or definitions and/or instructions applicable to the data request.
5. SDG&E and SoCalGas expressly reserves the right to supplement, clarify, revise, or correct any or all of the responses and objections herein, and to assert additional objections or privileges, in one or more subsequent supplemental response(s).
6. SDG&E and SoCalGas will make available for inspection at their offices any responsive documents. Alternatively, SDG&E and SoCalGas will produce copies of the documents.
7. Publicly available information and documents including, but not limited to, documents that are part of the proceeding record, newspaper clippings, court papers, and materials available on the Internet, will not be produced.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

GENERAL OBJECTIONS

1. SDG&E and SoCalGas object to each instruction, definition, and request to the extent that it purports to impose any requirement or discovery obligation greater than or different from those under the CPUC Rules of Practice and Procedure, Statutes, and the applicable Orders of the Commission.
2. SDG&E and SoCalGas object to each request that is overly broad, unduly burdensome, or not reasonably calculated to lead to the discovery of admissible evidence.
3. SDG&E and SoCalGas object to each instruction, definition and data request to the extent that it seeks information protected from disclosure by the attorney-client privilege, deliberative process privilege, attorney work product doctrine, or any other applicable privilege. Should any such disclosure by SDG&E and SoCalGas occur, it is inadvertent and shall not constitute a waiver of any privilege.
4. SDG&E and SoCalGas object to each instruction, definition and data request as overbroad and unduly burdensome to the extent it seeks documents or information that are readily or more accessible to Southern California Generation Coalition (SCGC) from SCGC's own files, from documents or information in SCGC's possession, or from documents or information that SDG&E and SoCalGas previously released to the public or produced to SCGC. Responding to such requests would be oppressive, unduly burdensome, and unnecessarily expensive, and the burden of responding to such requests is substantially the same or less for SCGC as for SDG&E and SoCalGas.
5. SDG&E and SoCalGas object to each instruction, definition and data request to the extent that it seeks the production of documents and information that were produced to SDG&E and SoCalGas by other entities and that may contain confidential, proprietary, or trade secret information.
6. To the extent any of SCGC's data requests seek documents or answers that include expert material, including but not limited to analysis or survey materials, SDG&E and SoCalGas object to any such requests as premature and expressly reserves the right to supplement, clarify, revise, or correct any or all responses to such requests, and to assert additional objections or privileges, in one or more subsequent supplemental response(s) in accordance with the time period for exchanging expert reports set by the Commission.
7. SDG&E and SoCalGas incorporate by reference every general objection set forth above into each specific response set forth below. A specific response may repeat a general objection for emphasis or some other reason. The failure to include any general objection in any specific response does not waive any general objection to that request. Moreover, SDG&E and SoCalGas do not waive their right to amend any responses.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

QUESTION 11.1:

11.1. With respect to the Applicants' response to SCGC-07, Q.7.4, which states:

7.4.1 As indicated in the response to SCGC DR 06, Question 6.5.3, a voltage stability limit exists at the 2,500 MW power import level for a scenario in which there is no local gas fired electric generation in SDG&E's area. A minimum amount of local gas fired generation will not avoid incurring the voltage stability limit but it could increase the power import level at which a voltage stability limit occurs. The voltage stability limit can be calculated during operations based on system conditions, generation levels and locations at that time, but no one specific number can be provided in response to this question.

7.4.2 In general, gas fired generation can be located anywhere within SDG&E's service territory in order to avoid or mitigate the voltage stability limit, given that it is connected to the high-voltage transmission network.

- 11.1.1. Does this generation have to be operating in order to avoid incurring the voltage stability limit or does can it be in standby mode capable of rapid start up if needed?
- 11.1.2. If the plant must be operating, please explain why this is so.
- 11.1.3. Are EG plants located in the Rainbow Corridor north of Rainbow Station capable of providing electric generation that would mitigate the voltage stability limit?
- 11.1.4. If the answer to the previous question is "no," please explain why not.

RESPONSE 11.1:

- 11.1.1. Natural gas-fired electric generation must be online and available to immediately provide post-contingency reactive power to support system voltage. Rapid start, usually called "quick-start" by industry standards, natural gas-fired electric generators are able to be dispatched in a relatively short period of time (approximately 15-minutes), however, 15-minutes is much too long to respond to post-transient conditions.
- 11.1.2. After contingencies, some of the remaining electric transmission lines get extremely loaded, and loaded lines require reactive power. Absent a source of reactive power, voltage will decline to a point that a voltage collapse could take place. Natural gas-fired

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

electric generation units, if on, can quickly provide the reactive power needed to support the voltage and prevent the system from going into a voltage collapse. Online natural gas-fired electric generation units also supply spinning MW reserves to meet electric demand.

- 11.1.3. The physical location of the electric generation (EG) plants does not determine whether or not they can be effective. The electrical connectivity does. Given the current system configuration, EG plants located in the Rainbow Corridor north of Rainbow Station are not capable of providing electric generation that would mitigate the voltage stability limit.
- 11.1.4. The system configuration as it stands today does not allow for EG north of Rainbow Station to have direct impacts on the SDG&E electric transmission system.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

**Date Requested: January 18, 2017
Date Responded: February 1, 2017**

QUESTION 11.2:

- 11.2. The October 23, 2015 Gas Capacity Planning and Demand Forecast Semi-Annual Report that was submitted to the Energy Division by SDG&E lists a 1-in-10 year cold day demand level for EG of 199 MMcf/d for winter 2015/2016 and 165 MMcf/d for winter 2016/2017.
- 11.2.1. Is the EG demand level specifically based on a projection of average EG usage during a cold month or peak EG usage during the cold month?
- 11.2.2. Is the EG demand level increased for a 1-in-10 year cold winter day relative to an average temperature winter day?
- 11.2.3. Is the EG demand level forecast based on output of a production cost model such as Ventyx?
- 11.2.4. If the answer to the previous question is “yes,” does the model rely upon the assumption of economic dispatch with the plants in the SDG&E area being competitively bid into the CAISO day ahead and/or real time markets?
- 11.2.5. Please explain your response to the previous question.
- 11.2.6. Is the forecast based on a study of minimum possible EG consumption on a 1-in-10 cold day?
- 11.2.7. If the answer to the previous question is “no,” is this forecast based on historical gas usage observed during previous cold winter periods?

RESPONSE 11.2:

- 11.2.1 The EG demand level is the expected EG demand during a 1-in-10 year cold day (peak day usage), not a projection of average EG usage during a cold month.
- 11.2.2 SDG&E and SoCalGas (Applicants) did not model an average temperature winter day under the same assumptions used in the October 23, 2015 Gas Capacity Planning and Demand Forecast Semi-Annual Report; however, the EG demand in a colder-than-normal winter day may be higher than in an average winter day because of factors like higher demand for electric heating.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

-
- 11.2.3 Yes, it is based on the output of Ventyx.
- 11.2.4 Yes. Ventyx dispatches plants economically to serve electricity demand. It minimizes cost while meeting local and system constraints.
- 11.2.5 See the response to Question 11.2.4 above.
- 11.2.6 The study used the Ventyx production cost model. The objective function of the model is to minimize cost while meeting local and system constraints. To minimize costs, the optimization process may minimize the use of natural gas.
- 11.2.7 N/A.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

QUESTION 11.3:

11.3. The Aliso Canyon Risk Assessment Technical Report dated August 22, 2016 of which Southern California Gas Company was listed as an authoring entity states at pages 34-35:

An analysis was conducted to determine the minimum energy and capacity requirements for the LADWP and California ISO system within the SoCalGas service area under normal 1-in-10-day winter operating conditions. Assuming all transmission lines are in service and non-QF generation is available, during winter peak conditions, the minimum output of generation served by the SoCalGas/SDG&E service territories to meet the studied reliability criteria was 108 MW for the combined LADWP and California ISO area. The combined minimum gas burn of 22 MMcfd was necessary to maintain electric reliability as shown in Figure 13.

A second analysis was conducted to determine the minimum energy and capacity requirements for LADWP and California ISO system within the SoCalGas service area under a post-contingency event during the 1-in-10-day winter operating conditions. To meet the requirement following the most severe single contingency, the minimum commitment of non-QF generation served by SoCalGas is 2,000 MW for the California ISO and is 585 MW for the LADWP. The energy commitment will be the greater of these two post-contingency needs as these contingencies are not assumed to be coincident events. These energy requirements were translated to a combined minimum gas burn of 96 MMcfd was necessary to maintain electric reliability after the worst case contingency event for the combined LADWP and California ISO area.

11.3.1. What portion of the 96 MMcfd referred to in the N-1 contingency analysis would correspond to gas burn required to maintain electric reliability in SDG&E's service territory?

11.3.2. Does this minimum gas burn under N-1 contingency circumstances correspond to the generation required to meet the voltage stability limit discussed in the response to SCGC-07, Q.7.4?

11.3.3. If the answer to the previous question is "no," please explain how SDG&E would meet its voltage stability limit under this minimum gas burn scenario.

RESPONSE 11.3:

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

Applicants object to Question 11.3 on the grounds that it calls for information not in Applicants' possession, custody or control, calls for speculation as to CAISO's and LADWP's methodology and findings, and the report speaks for itself. SoCalGas only participated in providing portions of the report that related to the gas delivery system, and cannot respond to these particular questions. Please direct your questions to CAISO and LADWP.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

**Date Requested: January 18, 2017
Date Responded: February 1, 2017**

QUESTION 11.4:

11.4. With respect to the 2016 California Gas Report that shows the following table at page 7:

Impact of Renewable Generation and Energy Efficiency Programs on Gas Demand								
	2016	2017	2018	2019	2020	2025	2030	2035
California Energy Requirements by CPUC-Jurisdictional Utilities (CAISO) ⁽¹⁾								
Electricity Demand (GWh)	254,951	253,808	251,995	250,857	250,201	249,154	247,036	245,176
33% Renewables by 2020 & 50% Renewables by 2030								
Renewable Electric Generation (GWh/Yr) ⁽²⁾	63,738	68,528	73,078	77,766	82,566	103,399	123,518	122,588
Increase over 2015 Level (GWh/Yr) ⁽³⁾	3,998	8,789	13,339	18,026	22,827	43,659	63,779	62,849
Gas Savings over 2015 Level (Bcf/Yr) ⁽⁴⁾	24	53	81	109	139	265	387	381
Electric Energy Efficiency Goals ⁽⁵⁾								
Electricity Savings over 2015 Level (GWh/Yr)	3,562	6,976	10,092	12,749	15,110	23,645	33,832	44,604
Gas Savings over 2015 Level (Bcf/Yr) ⁽⁴⁾	22	42	61	77	92	143	205	271
Energy Efficiency Goal for Natural Gas Programs ⁽⁶⁾								
Gas Savings over 2015 Level (Bcf/Yr)	10	26	37	50	70	111	149	189
Total Gas Savings (Bcf/Yr) ⁽⁷⁾	55	122	180	237	300	520	741	841
Notes:								
(1) Electricity demand forecast from the California Energy Commission: http://www.energy.ca.gov/2015_energypolicy/documents/2016-01-27_load_serving_entity_and_balancing_authority_plp_Mid-Case_LSE_and_Balancing_Authority_Forecast.xls , "forml.1c" tab. From 2027-2035 the average growth rate was used from the last five years (2022-2026) which is -0.151%.								
(2) Assumes 33% renewables by the year 2020 and 50% renewables by 2030.								
(3) Increase reflects only the impacts of equipment installed after December 31, 2015.								
(4) Gas savings are estimated based on the following generic assumptions for California: gas-fired peaking plants are assumed to be the marginal source for 10% of the 8,760 hours in each year (24 x 365) and combined-cycle plants are marginal in another 75% of each year. Each MWh displaced from a peaking plant saves 10 MMBtu (10 Dth, or approximately 10,000 CF) of natural gas. Each MWh displaced from a combined-cycle plant saves 7 MMBtu (7 Dth, or approximately 7,000 CF) of natural gas. A conservation program that saves 1 MWh in every hour of a year saves about 55,000 MMBtu of natural gas (8,750 hours x 10% x 10 MMBtu, plus 8,760 hours x 75% x 7 MMBtu). Conservation programs that save MWh primarily during summer peak periods produce greater natural gas savings per MWh. Similar estimates apply to renewable electric generators.								
(5) Data from the California Energy Commission: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?doctype=15-IEPR-03 ; "Committed Electricity Efficiency Conservation Savings by Planning Area and Sector", Mid CORRECTED, "STATEWIDEnourscon-Mid Demand" tab. From 2027-2035 the average growth rate was used from the last five years (2022-2026) which is 1.661%.								
(6) Data from the California Energy Commission: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?doctype=15-IEPR-03 ; Committed Gas Savings by PA-RF15.xls. From 2027-2035 the average growth rate was used from the last five years (2022-2026) which is 1.096%.								
(7) Total gas savings are annual savings from equipment installed after December 31, 2015.								

11.4.1. Is it the Applicants' belief that the CEC forecast shown in the first row of the table already incorporates the electric efficiency goals shown in the fifth row and footnoted with "5"?

11.4.2. Please explain your response to the previous question.

11.4.3. Does the statewide forecast of natural gas usage reflect the energy efficiency goals for natural gas programs shown in the seventh row and footnoted with "6" before the total gas savings shown in the bottom-most row are applied as an adjustment to the statewide forecast of natural gas usage?

11.4.4. Please explain your response to the previous question.

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)**

(11th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

Date Requested: January 18, 2017

Date Responded: February 1, 2017

RESPONSE 11.4:

11.4.1. Yes.

11.4.2. The California Energy Commission (CEC) source document (Tab “Form 1.1c” of the attached Excel file) indicates in Row 81 that “AAEE savings applied to PG&E, SCE, SDG&E, LADWP, and SMUD service territories” – and are thus incorporated in the Row 78 “Total Statewide” figures used in the first data row of the CGR table.

The source for Table 1.1c is the CEC’s 2015 Integrated Energy Policy Report (IEPR).

The highlighted numbers at the bottom of the page are the same numbers incorporated in Row 1 of the Impact Table on page 7 of the 2016 California Gas Report.

11.4.3. Yes, the Joint California Utilities’ natural gas demand forecast includes an adjustment for the EE.

11.4.4. The Joint California Utilities made forecast adjustments to account for EE savings. The EE savings source is the 2015 IEPR.

On Page 39 of the 2016 California Gas Report, PG&E states that they used levels of EE included in the 2015 IEPR in the forecast for the CGR.

On Page 76 of the 2016 California Gas Report, SoCalGas indicates that the source of the EE savings included in the forecast is the 2015 IEPR.

On Page 117 of the 2016 California Gas Report, SDG&E indicates that the cumulative net load impact includes all energy efficiency programs from SDG&E’s integrated gas and electric energy efficiency programs. The programs were authorized by the Commission in D.15-10-028.