

**SAN DIEGO GAS & ELECTRIC COMPANY  
SOUTHERN CALIFORNIA GAS COMPANY  
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)  
(A.15-09-013)  
(8<sup>th</sup> DATA REQUEST FROM TURN)**

**Date Requested: March 20, 2017**

**Date Responded: April 3, 2017**

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**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.

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**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 TURN from TURN's own files, from documents or information in TURN's possession, or from documents or information that SDG&E and SoCalGas previously released to the public or produced to TURN. 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 TURN 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 TURN'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.

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**QUESTION 1:**

Please provide all data requested in TURN DR 6 in Excel machine readable form.

**RESPONSE 1:**

Please see the attached files.

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**QUESTION 2:**

In SCG's response to TURN 6 q.9, applicants state that "plastic pipelines are not used by Applicants for high pressure service."

- a. How does SCG define "high pressure service."?
- b. Please explain whether a i) 14" or ii) 12" plastic pipeline could be inserted into the existing Line 1600 to provide service at something other than high pressure service? If so, for each size that could be inserted, please indicate what would be the maximum throughput (in MMcfd), MAOP and operational pressure?

**RESPONSE 2:**

- a. SDG&E and SoCalGas (Applicants) define "high pressure" as a pipeline operating at a pressure greater than 60 psig
- b. Applicants have not determined the feasibility of physically inserting a 14" or 12" plastic pipeline into the existing Line 1600. As Applicants previously stated in response to TURN DR 6, Q9, plastic pipelines are not used for high pressure service on the SoCalGas/SDG&E system. A 14- or 12-inch plastic pipeline would not contribute to the system capacity or throughput.

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**QUESTION 3:**

Is SCG/SDG&E aware of “slip lining” plastic pipe into a larger diameter steel or plastic pipe, as described, for example, in the following:

<https://plasticpipe.org/pdf/chapter11.pdf> ?

**RESPONSE 3:**

The Applicants are aware of the method of inserting a replacement polyethylene (PE) pipe within an existing host pipe, referred to as “slip lining”.

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**QUESTION 4:**

Has SCG/SDG&E ever used the “slip lining” method to insert plastic pipe into steel pipe?

- a. If yes, please provide details (size, length, cost) of at least one such project?
- b. If yes, please indicate what is the maximum size of plastic pipe that has been inserted, and what is the maximum size of steel pipe into which plastic pipe has been inserted.
- c. If no, please explain whether SCG/SDG&E has ever evaluated the benefits and costs of slip lining as an alternative method for replacing existing pipe? Please provide a sample of any document or study produced from such an evaluation.

**RESPONSE 4:**

- a. The Applicants have used the “slip lining” method at distribution pressure, primarily to insert ½” nominal diameter polyethylene service into a ¾” nominal diameter steel distribution service. The cost ranges from several hundred to a few thousand dollars.
- b. See the response to Question 4(a) above.
- c. N/A

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**QUESTION 5:**

Re. the Response to TURN DR 6-11:

- a. Please provide the average and maximum North-South flow of gas in MMCF/d from SCG's northern system to its southern system if Line 1600 is de-rated to distribution level service and Line 3010 is operated as it is currently operated assuming the North-South gas flow is by displacement. That is, Northern System gas would flow south instead of into the LA basin which would be served by gas storage withdrawals.
- b. Please provide the North-South flow of gas in MMCF/d from SCG's northern system to its southern system by displacement if the Aliso Canyon storage field is closed permanently during a 1-in-35 peak day event.

**RESPONSE 5:**

- a. Please refer to the response to TURN DR 6, Question 11 in this proceeding.
- b. Please refer to the response to TURN DR 6, Question 12 in this proceeding.

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**QUESTION 6:**

In SCG's response to TURN 6, q.34 SCG provides a table of approximately thirteen purchases from ECA for delivery at Otay Mesa on various dates from 2011-2016. Yet in response to TURN DR 6, q. 32 "Please provide any communication SDG&E/SCG has had with Sempra LNG to secure gas for peak day protection from Costa Azul or with Shell Mexico Natural gas or Gasprom Trading Mexico." SCG states that "Applicants have not had any communication with ECA storage customers to secure gas ..." If that is correct, please provide details as to how and by whom the purchases of gas from ECA listed in DR 06-34b were obtained.

**RESPONSE 6:**

Purchases made in February 2011 were from a third party who was not an affiliate of SoCalGas and SDG&E.



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**QUESTION 7:**

In response to TURN 6, q 26 and q. 28:

- a. Please indicate “ramp need” in MMCF/d required to meet the increased MW load. Please indicate the Combined Cycle and Combustion Turbine heat rates and MMCF/d required by each to meet the “duck curve” load.
- b. Please indicate whether the “ramp need” could be met by increased electricity imports during these events.
- c. Please indicate the pack and draft available in MMcf/d during the “duck curve”. (Please assume that the SDG&E gas transmission and distribution system is packed from 12 AM to 6 PM and drafted from 6 PM to 9 PM.)”

**RESPONSE 7:**

- a. While the duck curve is not SDG&E specific, the California Independent System Operator (CAISO) would utilize the electric generation fleet in San Diego to meet the ramp. There is a potential that all of the natural gas-fired electric generating plants would be needed. Please see the table below for MMCF/d required to meet the “duck curve” load.

Generator Units		Generation Capacity [MW]	Ramping Capacity [MW]	Full Load Heat Rate [BTU/KWHR]	MMcf/d (for 5 hours)
<b>Major Units</b>	Encina 2	104	84	10,300	4.8
	Encina 3	110	90	10,300	5.1
	Encina 4	300	240	10,200	13.5
	Encina 5	330	270	9,800	14.6
	Otay Mesa Energy Center	603.6	301.8	7,000	11.6
	Palomar Energy Center	565.6	282.8	7,000	10.9
<b>Peaking Units</b>	Calpeak Border	48	48	10,500	2.5
	CEP (Cuyamaca) El Cajon	45.4	45.4	10,500	2.4
	Calpeak Escondido	48	48	10,500	2.5

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	Coral Border (Larkspur 1)	46	46	10,000	2.3
	Coral Border (Larkspur 2)	46	46	10,000	2.3
	El Cajon 2 - (Wellhead)	48.1	48.1	10,000	2.4
	Miramar MEFI (SDG&E)	48	48	10,000	2.4
	Miramar MEFII (SDG&E)	47.9	47.9	10,000	2.4
	MMC Chula Vista (Otay)	35.5	35.5	15,000	2.7
	MMC Escondido	48.7	48.7	10,000	2.4
	Pio Pico	308	308	9,000	13.9
	Orange Grove (Pala)	96	96	9,000	4.3
<b>Gas Turbines</b>	Encina GT	14.5	14.5	15,000	1.1
	Kearny 3 GT	61	61	15,000	4.6
<b>QFs</b>	Goal Line QF	49	49	12,000	2.9
	NI QF	35.1	N/A	N/A	N/A
	NS QF (Division)	43	N/A	N/A	N/A
	NTC QF (MCRD co-gen)	21.2	N/A	N/A	N/A
	Others (est)	35	N/A	N/A	N/A
<b>Renewable</b>	Borrego	20	N/A	N/A	N/A
	Kumeyaay	10	N/A	N/A	N/A
	Lake Hodges 1	20	N/A	N/A	N/A
	Lake Hodges 2	20	N/A	N/A	N/A
<b>Battery Storage</b>	El Cajon	7.5	N/A	N/A	N/A
	Escondido	30	N/A	N/A	N/A

**Notes:**

- 1) Usage does not include gas needed for start-up.
- 2) Gas usage does not include gas needed for major units minimum load operation.
- 3) For Major Units a 10% heat rate penalty is applied to represent the inefficiency from minimum to full load.
- 4) No values provided for QFs which are not dispatchable for ramp but could be on-line at the time of the ramp.
- 5) For major units an assumption has been made as to minimum load the units must be at in order to respond to request for ramp.

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- b. Electricity imports may be utilized during the “duck curve” ramp barring any import limitations due to voltage stability and thermal limits.
  - c. Please refer to SDGE-12: Supplemental Testimony of SDG&E and SoCalGas, page 17 at lines 8-9. The usable linepack capacity does not change with assumptions regarding pack or draft periods.

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**QUESTION 8:**

Re. DR 06-Q. 28: SDG&E/SCG's response is not responsive to the detailed question concerning Mr. Yari's Table 1. Please provide responses as requested. If Mr. Yari has not done any analysis on how much gas is needed to accommodate the "Duck Curve" or necessary back up fuel supplies, please so indicate.

**RESPONSE 8:**

SDG&E has not evaluated the cost of electricity storage or electric power plants' on-site LNG, butane or above ground natural gas storage facilities to meet the "duck load" and what the cost of each would be. As for the requested data corresponding to equivalent quantities to that shown in the "MMcf/d (for 5 hours)" column in the table included in response to TURN 08 Question 7, please see the information presented below:

Generator Units		Natural Gas MMcf/d (for 5 hours)	Equivalent MMBtu	Equivalent LNG (gallons)	storage volume occupied by equivalent natural gas-liquid state in units of 1000 cubic feet (MCF)	Equivalent Butane (gallons)	storage volume occupied by equivalent butane-liquid state in units of 1000 cubic feet (MCF)
<b>Major Units</b>	Encina 2	4.8	5198.4	62900.6	8.4	50948.7	6.8
	Encina 3	5.1	5523.3	66831.9	8.9	54133.0	7.2
	Encina 4	13.5	14620.5	176908.1	23.5	143293.3	19.1
	Encina 5	14.6	15811.8	191322.8	25.5	154969.0	20.7
	Otay Mesa Energy Center	11.6	12562.8	152009.9	20.2	123126.1	16.4
	Palomar Energy Center	10.9	11804.7	142836.9	19.0	115696.1	15.4
<b>Peaking Units</b>	Calpeak Border	2.5	2707.5	32760.8	4.4	26535.8	3.5
	CEP (Cuyamaca) El Cajon	2.4	2599.2	31450.3	4.2	25474.4	3.4
	Calpeak Escondido	2.5	2707.5	32760.8	4.4	26535.8	3.5
	Coral Border (Larkspur 1)	2.3	2490.9	30139.9	4.0	24412.9	3.3

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	Coral Border (Larkspur 2)	2.3	2490.9	30139.9	4.0	24412.9	3.3
	El Cajon 2 - (Wellhead)	2.4	2599.2	31450.3	4.2	25474.4	3.4
	Miramar MEFI (SDG&E)	2.4	2599.2	31450.3	4.2	25474.4	3.4
	Miramar MEFII (SDG&E)	2.4	2599.2	31450.3	4.2	25474.4	3.4
	MMC Chula Vista (Otay)	2.7	2924.1	35381.6	4.7	28658.7	3.8
	MMC Escondido	2.4	2599.2	31450.3	4.2	25474.4	3.4
	Pio Pico	13.9	15053.7	182149.8	24.2	147539.0	19.7
	Orange Grove (Pala)	4.3	4656.9	56348.5	7.5	45641.6	6.1
<b>Gas Turbines</b>	Encina GT	1.1	1191.3	14414.7	1.9	11675.7	1.6
	Kearny 3 GT	4.6	4981.8	60279.8	8.0	48825.9	6.5
<b>QFs</b>	Goal Line QF	2.9	3140.7	38002.5	5.1	30781.5	4.1
	NI QF	N/A	N/A	N/A	N/A	N/A	N/A
	NS QF (Division)	N/A	N/A	N/A	N/A	N/A	N/A
	NTC QF (MCRD co-gen)	N/A	N/A	N/A	N/A	N/A	N/A
	Others (est)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Renewable</b>	Borrego	N/A	N/A	N/A	N/A	N/A	N/A
	Kumeyaay	N/A	N/A	N/A	N/A	N/A	N/A
	Lake Hodges 1	N/A	N/A	N/A	N/A	N/A	N/A
	Lake Hodges 2	N/A	N/A	N/A	N/A	N/A	N/A
<b>Battery Storage</b>	El Cajon	N/A	N/A	N/A	N/A	N/A	N/A
	Escondido	N/A	N/A	N/A	N/A	N/A	N/A

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**QUESTION 9:**

Please explain how SCG/SDG&E plan to serve the four 400 psi large load customers if Line 1600 is de-rated to distribution level service and the Commission denies the building of Line 3002? If SCG/SDG&E plan to then serve those customers from Line 3010, what is the cost of laterals to serve those customers?

**RESPONSE 9:**

Applicants object to this question as it is vague and ambiguous referring to unidentified “four 400 psi large customers.” In addition, Applicants assume that the “Line 3002” mentioned in the subject question is intended to mean Line 3602. Notwithstanding these objections, Applicants response as follows:

De-rating Line 1600 without installing the proposed Line 3602 is outside of the scope of this application, therefore, Applicants have not made any study, analysis, or determination as to how customers would be served. De-rating Line 1600 to 320 psig MAOP is anticipated to continue providing sufficient capacity to customers currently served from Line 1600 with volumes of gas to meet their current demands. SoCalGas and SDG&E do not guarantee pressure.