

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

(10th DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION)

**Date Requested: January 10, 2017
Date Responded: January 26, 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.

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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 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.

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QUESTION 10.1:

Please provide the latest SDG&E Gas Capacity and Demand Forecast Semi-Annual Report ("Report") that SDG&E sent to the Commission in compliance with D.02-11-073.

RESPONSE 10.1:

Please refer to the attached report.

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QUESTION 10.2:

Please identify the California Energy Commission (“CEC”) California Energy Demand (“CED”) forecast that was used to prepare the Report and provide a link to the CED forecast.

RESPONSE 10.2:

The California Energy Commission’s (CEC) California Energy Demand (CED) 2016 – 2026, Revised/Final Electricity Forecast, dated January 2016 was used to prepare the SDG&E Gas Capacity and Demand Forecast Semi-Annual Report. SDG&E and SoCalGas selected the Mid Energy Demand scenario with Mid Additional Achievable Energy Efficiency (AAEE) scenario.

The CED forecast is available here: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207439_20160115T152221_California_Energy_Demand_20162026_Revised_Electricity_Forecast.pdf

For model input data, the CEC compiled the load data into multiple files identified in the link below. The scenario with Mid Demand Baseline – Mid AAEE was selected.

http://www.energy.ca.gov/2015_energypolicy/documents/2016-01-27_load_serving_entity_and_Balancing_authority.php.

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QUESTION 10.3:

Please identify the date of the next SDG&E Report and identify the CEC CED that will be used to prepare the Report.

RESPONSE 10.3:

SDG&E and SoCalGas object to this question as vague and ambiguous. SCGC fails to identify which report is meant by “the next SDG&E Report”. Subject to and without waiving this objection, SDG&E and SoCalGas respond as follows: The next SDG&E Gas Capacity Planning and Demand Forecast Semi-Annual Report will be filed with the Commission in April, 2017. Prior to the filing of the next report, SDG&E will evaluate which CEC CED forecast is appropriate to use to prepare the report.

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QUESTION 10.4:

Regarding the Applicants' response to SGGC Data Request 4.15.1:

- 10.4.1 Is the southern 4.7 miles of Line 1600 the portion of Line 1600 that runs south from the interconnection between Line 1600 and Line 2010?
- 10.4.2 If the answer to the previous question is "no," please mark the northern-most point of the southern 4.7 miles of Line 1600 on the map provided to SCGC in response to Q.5.7.7.
- 10.4.3 Please identify by line number the distribution pipelines that interconnect with the southern 4.7 miles of Line 1600 and identify the MAOPs of those pipelines.
- 10.4.4 Please indicate the locations of those interconnecting distribution pipelines on the map provided to SCGC in response to Q.5.7.7.
- 10.4.5 Mr. Navin states (at 1) that Line 1600 extends from "Rainbow Pressure Limiting Station (PLS) to Kearny Villa PLS. Please mark the location of the Kearny Villa PLS on the map provided to SCGC in response to Q.5.7.7 and identify the pipeline(s) that connect with Line 1600 at Kearny Villa PLS.
- 10.4.6 Are there records of pressures measured on Line 1600 at Rainbow PLS and Kearny Villa PLS?
- 10.4.7 If the answer to the previous question is "yes," please provide all available recorded pressure data that was recorded during 2016.
- 10.4.8 If Line 1600 were operated at 320 psig, what would be the expected pressure at Kearny Villa PLS?
- 10.4.9 Would the pressure indicated in the previous response be sufficient for supplying the distribution pipelines that interconnect with Line 1600 at Kearny Villa PLS?

RESPONSE 10.4:

- 10.4.1 Yes.
- 10.4.2 N/A.

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- 10.4.3 See attached map which **contains confidential information and is provided pursuant to the Non-Disclosure Agreement between SDG&E/SoCalGas and SCGC**. The southern 4.7 miles of Line 1600 has several connections that serve in a distribution functional capacity. These include high pressure distribution supply lines, connections to district pressure regulator stations that feed the community as well as short pipelines and pressure regulator stations that serve as a direct feed to a customer. SDG&E and SoCalGas do not assign line numbers to pipelines that operate with a MAOP of 60 psig or less.
- 10.4.4 See attached map provided in response to question 10.4.3 above.
- 10.4.5 See attached map provided in response to question 10.4.3 above.
- 10.4.6 Yes.
- 10.4.7 The attached file **contains confidential information and is provided pursuant to the Non-Disclosure Agreement between SDG&E/SoCalGas and SCGC**. See attached file provided in response to this question.
- 10.4.8 Line 1600, if derated, would operate between the minimum operating pressure and the MAOP.
- 10.4.9 There are no distribution pipelines that interconnect with Line 1600 at Kearny Villa PLS.

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QUESTION 10.5:

Please identify the criteria utilized by the Applicants to determine that the southern 4.7 miles of Line 1600 should be outside the scope of this application.

RESPONSE 10.5:

As discussed in the subject Application (A.15-09-013), Applicants have proposed building a new 36-inch diameter natural gas transmission line (Line 3602) from the Rainbow Pressure Limiting Station in the north to a point approximately 47 miles to the south where the line would interconnect with existing transmission pipelines Line 2010 and Line 3011. This new line is intended to replace the transmission function of the northern 45 miles of Line 1600 between Rainbow in the north and Kearny Villa Station in the south, allowing those 45 miles to be derated and repurposed as a distribution line.

The southern 4.7 miles of Line 1600 do not substantially improve the safety, reliability, and operational benefits that the Proposed Project provides to the entire SDG&E system, and so were not included in this Application.

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QUESTION 10.6:

In what future proceeding would the Applicants address hydro-testing, replacing, or derating the southern 4.7 miles of Line 1600?

RESPONSE 10.6:

SDG&E and SoCalGas have not yet determined what future proceeding, if any, would address the hydro-testing, replacing, or derating the southern 4.7 miles of Line 1600.

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QUESTION 10.7:

Would any additional costs be incurred to de-rate the southern 4.7 miles of Line 1600 to 320 psig, e.g., to distribution service?

10.7.1 If the answer to the previous question is “yes,” please identify the facilities that would be needed to accomplish the derating of the southern 4.7 miles.

RESPONSE 10.7:

Based on a cursory review, it is likely that additional costs would be incurred to derate the southern 4.7 miles of Line 1600. However, Applicants have not completed a detailed study necessary to determine the scope of how this would be accomplished and the specific facilities that would need to be modified in order to accomplish the suggested de-rate.

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QUESTION 10.8:

Both the Proponent's Environmental Assessment ("PEA") Supplement and Mr. Woodruff say that the direct cost of the Proposed Project would be \$441.9 million (PEA Supplement, p. 2-22; Woodruff, p. 1), but Mr. Woodruff says (at 1) that the total fully loaded cost would be \$633.2 million while the PEA Supplement at 2-22) says that the fully loaded cost would be \$639.9 million. Please explain the \$6.7 million discrepancy.

RESPONSE 10.8:

The \$639.9 million figure presented in the PEA represents the fully loaded cost to complete all work associated with the proposed project, while the \$633.2 million figure is the basis for our requested revenue requirement and rate calculations that are sought for recovery.

The \$6.7 million difference is due to fully loaded expenditures required to remove the existing assets for the Line 1600 de-rate proposal.

SDG&E and SoCalGas follow the Federal Energy Regulatory Commission (FERC) Uniform System of Accounts in its accounting treatment of cost of removal. While it is captured as a direct cost of the project, it is charged to specific accounting internal orders and excluded from the revenue requirement calculation of incremental projects. As such, the expenditures associated with the existing asset will be incurred but not sought for rate recovery. Please refer to page 1, footnote 2 of Michael Woodruff's direct prepared testimony.

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QUESTION 10.9:

Please explain why Mr. Woodruff presents both SoCalGas labor overhead rates and SDG&E overhead rates in his Tables 2A and 2B for Line 3602 and Line 1600 de-rate.

10.9.1 Which set of labor overhead rates does Mr. Woodruff use in determining fully loaded costs for Line 3602 and the Line 1600 de-rate?

RESPONSE 10.9:

Labor required to complete the Proposed Project (both the new proposed Line 3602 and the Line 1600 de-rate work) will be performed by both SDG&E and SoCalGas. SoCalGas overhead rates are applied to direct expenses incurred by SoCalGas while SDG&E overhead rates are applied to direct expenses incurred by SDG&E.

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QUESTION 10.10:

Please identify the pipelines that would deliver gas into the de-rated Line 1600, identify the interconnection points on a map, identify the diameters, and identify the MAOPs of the delivering pipelines.

RESPONSE 10.10:

This response contains confidential information (shaded in gray) and is provided pursuant to the Non-Disclosure Agreement between SDG&E/SoCalGas and SCGC.

Please refer to the map provided in response to Question 10.4 above.

Line 1600 connects with the integrated transmission system at milepost 22.8 with Line 1601 (■■■■-inch diameter) and at milepost 44.8 with Line 3011 (■■■■ diameter) and Line 2010 (■■■■-inch diameter). Line 1601 has a MAOP of ■■■■ psig. Line 3011 and Line 2010 have a MAOP of ■■■■ psig. Gas would also continue to be delivered into Line 1600 from the SoCalGas system at the Rainbow Meter Station.

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QUESTION 10.11:

Please confirm that the Applicants' response to SCGC Data Request 5.1 means that if Line 1600 were derated, the nominal capacity of Line 3010 would remain 530 MMcfd, not the 570 MMcfd which Mr. Bisi says (at 7, footnote 10) would be the capacity of "a single 30-inch pipeline."

10.11.1 Please explain why the nominal capacity of Line 3010 would not change if Line 1600 were derated.

RESPONSE 10.11:

In Data Request 5.1, SCGC asked what the nominal capacity of Line 3010 would be if Line 1600 were operated as a distribution pipeline. SDG&E and SoCalGas responded that the nominal capacity of Line 3010 would not change. If Line 1600 were operated as a distribution pipeline as proposed, the nominal capacity of the SDG&E system would be 570 MMcfd.

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QUESTION 10.12:

The March 21, 2016 Proponent’s Environmental Assessment (“PEA”) Supplement, Chapter 2, identifies Distribution System Modifications that would be needed if Line 3602 were constructed and Line 1600 were derated to 320 psig. Please identify the Distribution System Modifications that would be needed if Line 3602 were not constructed and Line 1600 were nevertheless derated to 320 psig.

RESPONSE 10.12:

Assuming that any necessary improvements are made to the overall SDG&E/SoCalGas transmission system so that adequate quantities of gas at sufficient pressure are supplied into SDG&E’s transmission system so that the transmission capacity and functionality are maintained in a reasonably equivalent manner that exists today, the SDG&E distribution system modifications that would be needed if the proposed Line 3602 were not constructed and Line 1600 were nevertheless derated to 320 psig are presented below. These improvements are associated with the northern 45 miles of Line 1600 in accordance with the scope of Line 1600 as considered in the subject Application.

Pipeline Capacity Restoration Project

- Upgrade 4 Miles of 4-inch Section of L-49-120-B with a 6-inch pipeline to restore lost distribution system capacity.

Reconfiguration to Accommodate Regulator Station Abandonment/Removal

The nine 640 PSIG (512 PSIG) to 400 PSIG regulator stations listed in the table below would no longer be needed between Line 1600 and the high pressure distribution systems downstream as Line 1600 and the existing high pressure distribution systems would be operating at the same reduced pressure.

- Reg Station 1316
- Reg Station 1101
- Reg Station 1516
- Reg Station 141
- Reg Station 1500
- Reg Station 1248
- Reg Station 1051
- Reg Station 1335
- Reg Station 982

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Regulator Stations Requiring Modifications

- Reg Station 1494 would need to be modified to ensure it does not overpressurize Line 1600 during periods of low demand.

Under-Capacity Regulator Stations

- Regulator Station 939 would need to be replaced with a new regulator station with adequate capacity designed to operate at 320 psig.

Pressure Limiting Station- Line 1600 Interconnection to Line 1601

- At the interconnection of Line 1600 with Line 1601 in the City of Escondido, it will be necessary to install a new Pressure Limiting Station. Line 1601 will be operating with a higher MAOP than Line 1600 and equipment must be installed to prevent Line 1601 from over-pressurizing Line 1600.

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QUESTION 10.13:

The Applicants state in the PEA Supplement (at 2-6) “a new, approximately 1.08-mile-long, eight-inch-diameter distribution supply pipeline will be installed parallel to the pre-lay segment to replace Line 49-31C [the 36-inch pre-lay segment of Line 3602] within the distribution system and maintain system continuity.” What operational feature(s) would be “continued” by maintaining “system continuity”

RESPONSE 10.13:

As discussed in the Prepared Direct Testimony of Neil Navin, Attachment A, sub-attachment XI at pages 3 and 4, SDG&E installed the pre-lay segment in anticipation of a new 36-inch transmission pipeline from Rainbow. This pipeline segment was designed and tested to operate at 800 psig, however at the time of construction the segment was incorporated into the existing 400 psig system tying the Rancho Bernardo, Poway and Penasquitos system to the Scripps Ranch system. This served to provide a system tie to high pressure supply lines 49-120 and 49-122 in the north with 49-31B in the south providing capacity and reliability benefits by allowing gas to move either from north to south or south to north as necessary to support operations and customer demand. This pre-lay also served as a supply source for line 49-31A which serves as a high pressure feed to the Poway business park. With the construction of Line 3602 and the integration of the pre-lay segment into that new transmission line, the construction of a new 1.08 mile eight-inch-diameter high pressure distribution supply line as described will allow for the continued connection between the Rancho Bernardo, Poway and Penasquitos systems to the system in Scripps Ranch and also serve as the high pressure feed into the Poway business park. Thus, system continuity between these areas can be maintained and the functionality of the high pressure distribution system in the area will be preserved as it is today.

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QUESTION 10.14:

In the Applicants' response to SCGC Data Request 6.2.4, the Applicants said: "TGN's delivery capacity is 940 MMcfd." The home page for the TGN website, <http://tgndebajacalifornia.com/english/index.html>, says the TGN capacity is 800 MMcfd. Please explain the discrepancy between the Applicants' response and the information on the website.

10.14.1 In the Applicants' response to SCGC Data Request 6.2.6, the Applicants present a table showing "Subscribed Capacity" totaling 946,000 MMBtu/d. Please explain how subscribed capacity can exceed nominal capacity.

RESPONSE 10.14:

While the English version of the TGN homepage does indicate that its delivery capacity as 800 MMcfd the Spanish version describes its delivery capacity as 940 MMcfd. The 2015 IEnova Annual Report also describes the capacity of the TGN system to be 940 MMcfd as follows:

This fully bi-directional system, which is comprised of approximately 45 km of 30-inch diameter pipeline and has a capacity of 940 MMcfd (9.8 MMThd) interconnects with our Rosarito pipelines system in the Tijuana area and extends north to interconnect with our affiliate SDD&E's system at the Mexico-U.S. border in Otay Mesa and Southwest to the Mexican Federal Electricity Commission's 1,300 MW Presidente Juarez power plant in Rosarito, Baja California.

10.14.1 Applicants are unable to speak on behalf of TGN. Applicant does observe that the difference may be attributable to the units in the table being expressed as energy units (MMBtu/d) while capacity on the website is expressed in volumetric units (MMcfd).

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QUESTION 10.15:

In response to SCGC Data Requests 6.5.2 and 6.5.3, the Applicants stated:

6.5.2. The S-Line refers to the 230 kV Transmission Line wholly-owned by the Imperial Irrigation District (IID) from Imperial Valley Substation to El Centro Substation. "S-line Limit" is a limit determined by the rating of the S-line established by IID.

6.5.3. As indicated in Table 2, 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. However, as also indicated in Table 2, the SDG&E power import limit may be less than 2,500 MW when IID's S-Line limit is more limiting than the voltage stability limit, which occurs when the total dispatch of generation connected to Imperial Valley Substation is less than approximately 1,000 MW.

- 10.15.1 Why does the capacity of the S-Line affect the amount of generation that can be delivered into SDG&E via the Southwest Powerlink?
- 10.15.2 What is the current capacity of the S-Line?
- 10.15.3 What would the capacity of the S-Line need to be in order to eliminate the S-Line from being a limit on capacity as shown on Table 2 as reproduced from Mr. Yari's testimony (at 16) in SCGC Data Request 6.2?
- 10.15.4 What does SDG&E estimate to be the cost of re-conductoring the S-line to eliminate the S-Line from being a limit on import capacity as shown on Table 2?
- 10.15.5 Has SDG&E approached IID about re-conductoring the S-line to eliminate the S-Line from being a limit on import capacity as shown on Table 2?
- 10.15.6 Has SDG&E assessed the benefits of re-conductoring the S-line to eliminate the S-Line from being a limit on import capacity as shown on Table 2?
- 10.15.7 If the answer to the previous question is "yes," please enumerate the benefits. If the answer to the previous question is "no," please explain why SDG&E has not considered the benefits of re-conductoring the S-line.

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- 10.15.8 By how much would the voltage stability limit need to be raised so that imported electricity could meet SDG&E's peak load (5,372 MW for 2016 per Mr. Yari (at 16)?
- 10.15.9 What changes in SDG&E's transmission system would be required to raise the voltage stability limit to the level referred to in the previous question?
- 10.15.10 What does SDG&E estimate to be the cost of raising the voltage stability limit so that imported electricity could meet SDG&E's peak load?

RESPONSE 10.15:

- 10.15.1 SDG&E operates to the North American Electric Reliability Corporation (NERC), Peak Reliability (the NERC Reliability Coordinator) and California Independent System Operator (CAISO) standards and performance criteria. The performance criteria, as defined in the Peak RC's system operating limit (SOL) Methodology for the Operations Horizon, states that all facilities shall be within their emergency Facility Ratings and thermal limits post-single contingency.
- Significant power imported into San Diego from the East will cause an overload on the S-line post-single contingency of TL 50002 (Imperial Valley to North Gila segment of the Southwest Powerlink).
- 10.15.2 The S-line is currently rated for flows from North to South, by IID (its owner), at: 370 MVA (continuous or Normal Rating) and 407 MVA (30-minute Emergency Rating).
- 10.15.3 The S-line will need to be rated at least 700 MVA .
- 10.15.4 SDG&E objects that this question calls for information not in Applicants' possession, custody or control, and calls for speculation. SDG&E does not own the S-Line, and is not informed of the various regulations and technical details that would be needed to understand the scope of work necessary to upgrade the line, including whether transmission structures would need to be replaced or if re-conductoring is even sufficient. Among other things, proposed specifications for an upgraded line would have to be developed, reviewed through the CAISO transmission planning process, and a scope of work developed for any approved project. None of this work has been performed, and it would not be performed by SDG&E, which does not own the S line.

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- 10.15.5 IID is fully aware of this limitation and the limitation is captured in Peak RC's, CAISO's, and SDG&E's Standard Operating Procedures. IID has discussed with SDG&E and CAISO various plans to increase the "path" capacity by re-conductoring or adding a new line. SDG&E does not know and cannot speculate as to why IID has not pursued such plans.
- 10.15.6 SDG&E objects that this question calls for information not in Applicants' possession, custody or control, and calls for speculation. SDG&E does not own the S-Line, therefore it does not conduct unilateral studies on behalf of other entities.
- 10.15.7 SDG&E objects that this question calls for information not in Applicants' possession, custody or control, and calls for speculation. SDG&E does not own the S-Line; therefore, it does not conduct unilateral studies on behalf of other entities.
- 10.15.8 Applicants have not performed a detailed study of this issue, but preliminary analysis indicates the voltage stability limit needs to be raised by approximately 2000 MW. This is equivalent to a 500 kV line. Detailed studies would need to be undertaken simply to determine how much the voltage stability limit would need to be raised so that imported electricity could meet SDG&E's peak load, now and for at least a 10 year planning period.
- 10.15.9 SDG&E objects that this question calls for information not in Applicants' possession, custody or control, and calls for speculation. Applicants have not performed a study of this issue. Assuming the preliminary analysis set forth in response to Q. 10.15.8 above is correct, it would require a new line into the system capable of carrying 2000 MVA. Although more detailed studies would be required to develop the required scope of work, for the rough magnitude of the costs for such facilities, please see the response to Question 10.16.
- 10.15.10 As provided in Mr. Ali Yari's testimony, page 3, line 20 to line 24, it states:
- "In the absence of construction of the Proposed Project, these persistent gas-electric interdependency issues could require constructing one or more new transmission lines to increase electric transmission import capabilities, in order to provide adequate electric reliability in accordance with established NERC and other regulatory requirements."

Given data provided for the construction of one transmission line project as described in question 10.16.4, one of these types of projects could cost in the realm of \$1.6 - \$4.0 billion.

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QUESTION 10.16:

With respect to the first transmission project identified in the Applicants' response to SCGC Data Request 6.5.13 ("a transmission expansion project to extend a high-voltage connection from northern San Diego County to connect with Southern California Edison's system at Valley substation"):

- 10.16.1 How much electricity can be delivered to SDG&E from SCE system at the Valley substation?
- 10.16.2 How much would the project increase the amount of electricity that could be delivered to SDG&E from the SCE system at the Valley substation?
- 10.16.3 How much would the project raise the voltage stability limit?
- 10.16.4 Please identify the cost associated with the project.
- 10.16.5 Please enumerate the benefits associated with the project.

RESPONSE 10.16:

- 10.16.1 There is currently no electrical connectivity between SDG&E and SCE at the Valley substation. Given the current system configuration, no electricity can be delivered to SDG&E from SCE at the Valley substation.
- 10.16.2 Powerflow studies indicated that a new high-voltage connection from Southern California Edison's (SCE) Valley substation to the northern portion of SDG&E 230 kV system would increase the total deliverable energy to the San Diego load center on the order of 500-1000 MW, depending on system conditions. The point of delivery to the SDG&E system would likely be a new substation close to the border between Riverside and San Diego counties, south of Temecula, connecting into the existing 230 kV line between Talega and Escondido substations.
- 10.16.3 Powerflow studies indicate the project to connect SDG&E to Southern California Edison (SCE) at SCE's Valley substation would raise the voltage stability limit by 500-1000 MW.

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- 10.16.4 Cost estimates for a high-voltage connection from SDG&E to SCE's Valley Substation would be on the order of \$1.6 - \$4.0 billion.
- 10.16.5 The project to connect SDG&E to Southern California Edison (SCE) at SCE's Valley substation would add an additional high-voltage import gateway into the San Diego load center, mitigating the worst credible system contingencies for San Diego (The N-1-1 of ECO-Miguel and Ocotillo-Suncrest 500 kV lines and the G-1/N-1 of IV generation and Imperial Valley-N. Gila 500 kV line) and reduce reliance on conventional in-basin generation. The project would also improve the ability to import renewable energy to meet current and future Renewables Portfolio Standard (RPS) and greenhouse gas (GHG) reduction goals.

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QUESTION 10.17:

With respect to the second transmission project identified in the Applicants' response to SCGC Data Request 6.5.13 ("convert portions of SDG&E's existing 500 kV transmission system from AC to DC"):

- 10.17.1 How much would the project raise the voltage stability limit?
- 10.17.2 Please identify the cost of the project.
- 10.17.3 Please enumerate the benefits of the project.
- 10.17.4 What are the next steps involved in the CAISO review of the project.
- 10.17.5 When does SDG&E expect the CAISO to be finished with its review of the project?

RESPONSE 10.17:

- 10.17.1 Applicants object to this Question as calling for information not in Applicants' possession, custody or control, and thus calling for speculation. Applicants would need to conduct a detailed study of this issue.
- 10.17.2 The approximate cost of the project is \$900 million - \$1 billion.
- 10.17.3 This project would enhance the import capability for the San Diego load center, mitigating the worst credible system contingencies for San Diego (The N-1-1 of ECO-Miguel and Ocotillo-Suncrest 500 kV lines and the G-1/N-1 of IV generation and Imperial Valley-N. Gila 500 kV line) and reduce reliance on conventional in-basin generation. The project would also improve the ability to import renewable energy to meet current and future RPS and GHG reduction goals.
- 10.17.4 CAISO planning staff is reviewing this project as a part of the 2016/2017 TPP, and may or may not include it as a part of the transmission expansion plan. This project would require CAISO Board of Governors approval as it exceeds \$50 million in cost. As this is an interregional project, extend into the WestConnect planning area it will require interregional coordination. This project is also in review as a part of the CAISO's 50% RPS special study.

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10.17.5 Phase 2 of the 2016/2017 TPP will be concluded with approval of the transmission expansion plan in March, 2017. The project may be deferred to the 2017/2018 TPP cycle.