SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY

PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)

(A.15-09-013)

(5TH DATA REQUEST FROM TURN)

Date Requested: June 29, 2016
Date Responded: July 15, 2016

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:

Regarding Figure 1, p. 10– Operations Analysis (Navin Testimony, Attachment A, Attachment XII).

a. Please provide all Workpapers used to develop this figure.
b. Please explain how this Figure 1 was created. Please explain the basis for all data points.
c. Please fully explain why reduced compressor station operations are expected with installation of the Proposed Project. The response should supplement what was provided in response to data request TURN-04, question 3b, specifically as to why less compression is necessary because the project "can provide sufficient capacity to meet forecast customer demand."
d. Please explain why Assumption 1 states that savings are based on a 95% savings scenario but the figure shows 100% savings for 36" and 42" pipe. Please explain whether the 100% or 95% statistic is used as a "best case" scenario in subsequent calculations.

RESPONSE 1:

a. The workpaper used to develop Figure 1, p. 10-Operations Analysis (Navin Testimony, Attachment A, Attachment XII) is attached. Response to Question 1.b below describes how the figure was created.

b. Figure 1 was developed to show the how the cost savings for the pipeline diameter alternatives (C1-C7) were developed on a factored basis from the detailed savings estimate for the Proposed Project (36" pipeline).

   The Applicants estimate approximately $5.9 million per year in savings based on 95% reduction in operations at the Moreno Compressor Station if a 36-inch diameter gas transmission pipeline is installed as identified in Table 9 on page 9 of the Moreno Compressor Station Report (*See* Prepared Direct Testimony of Neil Navin, Attachment A at Attachment XII). No change in Moreno Compressor Station operations or operating costs would be realized for gas pipelines 16-inches in diameter or less.

   To determine the percent savings for the other pipeline diameters, the 0% savings for the 16-inch or less diameter pipelines and the 100% savings ($5.9 million per year) for the 36-inch pipeline were plotted on a graph. Cost savings for smaller diameter pipe (20"-30") are factored and plotted based on the ratio of the pipe diameter to the 36" pipeline - Proposed Project.

The percent savings for the remaining alternative diameter pipelines were plotted on the graph. The resulting graph shows a rough order of magnitude savings on a percentage basis for the different diameter pipelines relative to the Proposed Project (36" pipeline).

c. As explained in the Amended Application, the Moreno Compressor Station compresses gas supplies from the SoCalGas system for delivery to the SDG&E system at the Rainbow Meter Station. Because this is effectively the only source of supply to the SDG&E system, sufficient pressure must be provided at Rainbow Meter Station in order to overcome frictional losses across the SDG&E system and remain above Minimum Operating Pressures (MinOPs) at the southern end.

   The installation of a new pipeline on the SDG&E system as described in the Amended Application will certainly increase capacity relative to that without the new pipeline when operating at the same pressure differential between the northern and southern ends of the system. Alternatively, if the capacity is held constant, then the source pressure can be reduced in the scenario with the new pipeline relative to that without. A lower source pressure requires less compression at the Moreno Compressor Station.

d. The 100% of savings ($5.9 million per year) for the Proposed Project (36" pipeline) and Alternative C7 are based on 95% reduction in operations at Moreno Compressor Station (high case) as described on page 6 of the Moreno Compressor Station Report (*See* Prepared Direct Testimony of Neil Navin, Attachment A at Attachment XII).

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QUESTION 2:

If hydraulic modeling was used as a basis for Fig. 1, please provide:

a. The name of the modeling software.
b. A summary of all relevant assumptions (demand/supply conditions, pressure conditions) used in the modeling run used to generate Figure 1. Please explain the bases for any assumptions re load or pressure conditions.
c. Please explain whether historical or forecasted demand/supply conditions were utilized.
d. The equation used in the modeling software to calculate the relationship between flow and pipeline diameter at any given pressure differential.
e. Identify all data points that were based on hydraulic modeling results, and provide the specific numerical outputs from the hydraulic modeling used to create Figure 1, and explain how those outputs were converted to the data points on the Figure.
f. All workpapers that can be viewed without use of hydraulic modeling software. This may include data inputs from Excel.
g. Please provide all relevant actual historical data that shows the “straight line” relationship between pipeline diameter and compressor station savings.
h. Please provide all data, workpapers, and an explanation that demonstrate how the 100% savings statistic for 36” and 42” pipelines was determined. Please also provide an explanation for how this statistic was determined.

RESPONSE 2:

To clarify, SDG&E and SoCalGas inadvertently pointed to hydraulic modeling during the June 21, 2016 conference call with TURN as the basis of Figure 1 in support of the Prepared Direct Testimony of Neil Navin served on March 21, 2016. Hydraulic modeling was not the basis for Figure 1, but rather Figure 1 was derived as explained in Response 1b above.

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QUESTION 3:

Attachment A to the Direct Testimony of Neil Navin, page 7, states "The Proposed Line 3602 will include construction of the new Rainbow PLS."

a. Please describe the purpose of the new Rainbow PLS, including why the project is necessary.
b. What is the estimated cost of the Rainbow PLS? Please provide a short explanation related to this response.
c. Do all alternatives to the Proposed Project (including but not limited to small pipe diameter sizes) require construction of the Rainbow PLS? Please explain.
d. Is the cost of the Rainbow PLS the same for all alternatives to the Proposed Project? Please explain.
e. Does Table 2 of Neil Navin's Direct Testimony (p. 17) that shows "estimated direct costs" include the cost of the Rainbow PLS? If yes, in which category? If no, please explain why not.

RESPONSE 3:

a. The pipelines on the SoCalGas system that connect to the proposed Line 3602 pipeline have maximum operating pressures (MAOP) different than the MAOP (800 psig) for the proposed Line 3602 pipeline and because gas can flow from San Diego north into the SoCalGas system or from SoCalGas south into San Diego, pressure limiting is required.

b. The Proposed Project's PLS is estimated at $3,052,189. Construction: $846,000; Materials: $2,206,189.

c. Alternatives C1-C7, D, I and K would require construction of the Rainbow PLS for the reasons stated in 3.a above. The other alternatives would not require construction of the Rainbow PLS.

d. No. Different diameters require different sized materials for alternatives requiring construction of the Rainbow PLS (see response 3.c).

e. Yes, the costs are included in the materials and construction categories.

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QUESTION 4:

Please provide all workpapers in Excel with working formulas, where applicable, that support project cost estimates shown in Attachment VI, p. VI-1.

RESPONSE 4:

SDG&E and SoCalGas provided the confidential supporting workpapers for Attachment VI, p. VI-1 (*Attach VI_Cost Estimate Confidential.xlsm*) of the Prepared Direct Testimony of Neil Navin in response to TURN DR 4 on June 13, 2016 via electronic data transfer.

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QUESTION 5:

Please provide all workpapers, in Excel with working formulas where applicable, that show how "fixed costs" for alternative projects C1 to C6 are derived and all relevant assumptions. Please also provide a short explanation of the data provided.

RESPONSE 5:

The attachments contain confidential information provided pursuant to the NDA between TURN and SDG&E/SoCalGas.

Attached are confidential supplemental workpapers that show how the fixed costs for Alternatives C1 through C6 were derived.

The supplemental workpapers provide detailed cost breakdowns for the major project component by line item identifying quantities, units, unit costs and contingencies. The supplemental workpapers also provide the timing of expenditures.

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QUESTION 6:

The Cost-Effectiveness report, pp. 24-25, states that costs for alternatives C1 through D "were scaled from the Proposed Project on a cost per mile basis." However, the utility response to TURN-04, question 9, shows none of the projects were "scaled" from the proposed project (for instance, C1 and C2 "were scaled from C3)." Please explain this discrepancy.

RESPONSE 6:

The cost estimates for Alternatives C1 through C7 developed using the Proposed Project estimate as the baseline. The cost estimates were partially scaled directly and/or indirectly based on the Proposed Project but not "on a cost per mile basis" as previously identified in the Cost-Effectiveness report and alternative workpapers. The CEA will be updated to correctly identify these assumptions.

Alternates C3, C6 and C7 costs estimates were developed by a third party engineering firm based on the Proposed Project, vendor quotes for materials, and scaling construction costs based on size of pipe. SoCalGas developed the cost estimates for C1, C2, C4 and C5 based on the information from the Proposed Project, and Alternatives C3, C6 and C7 cost estimates. Scaling from similar size pipelines was employed where possible mainly in the construction cost estimates. The Cost Effectiveness Report and Alternative workpapers will be updated to correctly identify these assumptions.

Alternative D cost estimate was developed using information from Alternatives B and C3. Additional cost inputs specific to this project were obtained from ROW consultants, engineering and design staff to have the cost estimate be reflective of the specific conditions associated with the Line 1600 replacement project. The Cost-Effectiveness Report will be updated to correctly identify these assumptions. The Alternative D workpaper does not require updating.

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QUESTION 7:

As a supplement to TURN-4, question 3, please provide an explanation and all supporting workpapers or studies that support the 55% avoided capital cost (direct testimony of Neil Navin, Attachment A, Attachment XII, p. 8). SoCalGas' previous response did not explain the "engineering judgment" supporting 55% reduction in capital expenditure.

RESPONSE 7:

There are no studies or workpapers that support the 55% avoided capital cost. As stated in response to TURN-4, question 3, SDG&E based the annual cost savings on engineering judgement.

SDG&E / SoCalGas stations operations team was tasked with determining the potential capital savings resulting from a decrease in operating hours at the Moreno Compressor Station that are anticipated to result from the completion of PSRP. After reviewing the historic capital expenditure information, they determined that average annual capital expenditures related to run time, such as catalyst replacements, emission control systems maintenance, turbocharger replacements, and engine and compressor overhauls would be minimal. They also recognized that capital would be required to maintain the station, to upgrade equipment and emissions control systems, and address equipment breakdowns. The station operations team, based on their "judgement", believes that an average annual capital budget of approximately $ 800,000 would be adequate to cover runtime related costs, station maintenance and repair costs. This is 55% less that the 2011 to 2015 five year average capital spend at Moreno Compressor Station.

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QUESTION 8:

Regarding the direct testimony of Neil Navin, Attachment XII, Table 7, please provide supporting workpapers for this table, including relevant sub-categories for each year's capital expense.

RESPONSE 8:

Attached is a supporting supplemental workpaper for Attachment XII, Table 7 of the Prepared Direct Testimony of Neil Navin.