

**SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT (PSRP)
(A.15-09-013)
(2ND DATA REQUEST FROM ENERGY DIVISION)**

**Date Requested: June 2, 2016
Date Responded: June 13, 2016**

Please provide responses to the following Energy Division data request by June 13, 2016 on the gas supply and reliability assessment of Line 1600.

QUESTION 1:

A gas supply reliability analysis that addresses the implications of Line 1600 being out of service for hydrostatic testing or related repair/replacement work.

RESPONSE 1:

There is no study that addresses gas supply reliability implications of Line 1600 being out of service for hydrotesting or related repair/replacement work.

San Diego County is essentially completely reliant on the compressor station in the City of Moreno Valley (Moreno Compressor Station) and Line 3010, which together provide approximately 90 percent of SDG&E's capacity.

Line 1600 provides 100 mmscf/d capacity to San Diego County to meet peak day demand, transports gas to customers along its route and allows the delivery of up to 100 mmscf/d in the event of a derating of Line 3010 for maintenance or other issues. In the event of an outage on Line 3010, Line 1600 plays a critical role in providing time to curtail load and obtain supplies at Otay Mesa in order to keep core customers supplied with gas and help avoid wide-spread gas outages.

For any hydrotesting or repair/replacement work on Line 1600 that causes the line to be out of service, SDG&E and SoCalGas would attempt to plan and schedule that work to minimize impacts to customers. Additionally, SDG&E and SoCalGas would attempt to contract for gas delivery at Otay Mesa and/or, if necessary, implement curtailment measures per Rule 14.

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QUESTION 2:

An explanation of the lowest Maximum Allowable Operating Pressure (MAOP) and Maximum normal Operating Pressure (MOP) Line 1600 can operate at and the impact on SDG&E's system reliability. Please provide answers for both highest and normal peak demand days.

RESPONSE 2:

SDG&E and SoCalGas have evaluated the SDG&E system capacity with Line 1600 operating at an MAOP of 320 psig, without any new facilities installed in the SDG&E service territory, and have found that the SDG&E system nominal capacity falls from 630 MMcfd to 570 MMcfd in the winter operating season. This capacity is insufficient to meet the 1-in-10 year cold day design standard mandated by the Commission beginning with the upcoming winter operating season (November 2016 – March 2017), and is also insufficient to meet SDG&E's historical highest sendout condition of 674 MMcfd. The annual average SDG&E demand, as presented in the California Gas Report, can still be served.

At 320 psig, Line 1600 does not contribute to the SDG&E system throughput and serves only as a distribution supply line. Further reducing the operating pressure of Line 1600 will have no greater impact on the SDG&E system capacity, but may impact the ability of the distribution systems supplied from Line 1600 to meet customer demand without further distribution-level improvements.

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QUESTION 3:

A gas supply reliability analysis that addresses the implications of Line 1600 operating as transmission pipeline being de-rated to operate below 640 psig (MAOP).

RESPONSE 3:

Please refer to the response to Question 2 above.

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QUESTION 4:

An explanation of the impact on electric generators that are dependent on Line 1600 for supply (e.g., [REDACTED] Peaker generator) and reliability implications for those generators due to (a) hydro testing and (b) de-rating Line 1600.

RESPONSE 4:

This response contains confidential information (e.g., customer specific information) and is provided pursuant to G.O. 66-C and Cal. Pub. Util. Code § 583.

There are currently two electric generators (natural gas turbine peaker plants) served directly from Line 1600: [REDACTED].

Detailed plans for hydrotesting Line 1600 have not been completely developed. In the event the Commission orders SDG&E and SoCalGas to hydrotest Line 1600, SDG&E and SoCalGas would work with customers to minimize the potential for service disruptions. SDG&E and SoCalGas would, among other things, divide the hydrotest into multiple segments with the breakpoints at locations that feed significant customers such as electric generators as well as other locations that supply the distribution system. Supply would be maintained by connecting the customer(s) to the segment that remains in service while the adjacent segment is being tested.

Derating Line 1600 to 320 psig MAOP is anticipated to continue providing sufficient capacity to supply large customers such as the above described peakers and other large industrial customers with volumes of gas to meet their current demands. However, even if volumes would be met, supply pressure would be reduced, which may impact customers who desire higher pressures. In particular, large gas turbines used for electric generation or industrial processes may be impacted. The pressures needed vary based on the specific requirements of the equipment.

SDG&E and SoCalGas do not have specific and complete information on the [REDACTED] peaker units, but based on information provided by the developer at the time the plant was built, believe that on-site fuel gas compression to boost gas pressures exists at the facility. If not, potential impacts may include that the compressors may need to be reconfigured, or replaced to operate with lower suction pressure and the compressor operation may increase compared to historical operations, increasing auxiliary load, thus decreasing net electrical output.

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The [REDACTED] facility is also a gas turbine peaker plant which is believed to be approaching the point in its life cycle where it will be phased out of service in the next year or two. This gas turbine equipment is an older vintage and smaller in size than [REDACTED]. Fuel gas pressures requirements are significantly lower and based on a general understanding of the units, it is believed that derating Line 1600 to 320 psig will have no material impacts.

In addition to the electric generator peaker plants, SDG&E and SoCalGas have identified another large industrial customer that is served directly from a segment of Line 1600 that is not currently within the scope of the Pipeline Safety & Reliability Project (Application (A.)15-09-013).

[REDACTED] Derating this segment of Line 1600 to 320 psig would impact the customer in a similar way as [REDACTED] is impacted and steps such as on-site fuel gas compression would be needed to reach desired pressures.

An alternative to providing on site fuel gas compressors for impacted customers would be to extend a new high pressure pipeline from the closest high pressure source. In the case of [REDACTED], this would include building a pipeline connection from the proposed new Line 3602 and interconnecting to the current lateral feeding the peaker. For SDG&E's large industrial customer, a line would need to be extended from Line 3602, Line 3011 or Line 2010 to the facility. Neither of these conceptual pipeline extensions is currently being pursued, and they are currently not included in the proposed Pipeline Safety & Reliability Project scope.

SDG&E's and SoCalGas' goal is to implement pipeline safety requirements in a manner that protects community values and avoids any unnecessary customer impacts, whether due to hydrotesting Line 1600 or derating it. SDG&E and SoCalGas welcomes the opportunity as part of the Pipeline Safety & Reliability Project proceeding (A.15-09-013) to explore the potential customer impacts associated with either hydrotesting or derating Line 1600 and to identify appropriate measures that can be taken to protect community values by avoiding those impacts.

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QUESTION 5:

A description of contingency planning and the steps that SoCalGas and SDG&E would take, including the percentage of load curtailed by customer class, to maintain gas service in the SDG&E service territory assuming a complete and long-term failure of Line 1600 were to occur between the Rainbow Station and its interconnection with Line 1601 during July 2016. Include a list of non-core customers by type (for example, hospitals, refineries, electric generators, etc.) and its typical load during a summer peak day, summer peak hour and an average day. Please include the amount of interruptible load currently contracted on Line 1600 and type of customer.

RESPONSE 5:

Should Line 1600 be out of service as described in this question, SDG&E and SoCalGas would attempt to acquire supply transported on three pipelines (North Baja, Gasoducto Rosarito, and Transportadora de Gas Natural pipelines) for delivery at the Otay Mesa receipt point should demand exceed the reduced capacity of the SDG&E system. Failing that, SDG&E would implement curtailment on its system per SDG&E Gas Rule No. 14: Shortage of Gas Supply, Interruption of Delivery, and Priority of Service.

The data provided in the attached document contains **confidential customer specific information, and is provided pursuant to G.O. 66-C and Cal. Pub. Util. Code § 583**. SDG&E and SoCalGas do not have the data as requested readily available; however, the data for the Southern System - South of Moreno Zone that was prepared for Response 2.1 to Southern California Gas Coalition's 2nd data request in A.15-06-020, aggregated by customer class, is attached. Please note that this data includes demand for those customers located in this zone in Riverside County served by SoCalGas facilities. Capacity is not contracted on individual pipelines in the SDG&E and SoCalGas system, and SDG&E has not compiled a listing of all currently contracted interruptible demand served exclusively from Line 1600.

Although there are some commercial and industrial loads served from the SDG&E system, including hospitals, the primary noncore load on the SDG&E system by far is electric generation. There are no oil refineries or EOR customers served from the SDG&E system.

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QUESTION 6:

A description of other steps identified by SoCalGas and SDG&E that would allow Line 1600 to be de-rated as soon as possible. Include quantity of gas and associated costs for each step.

RESPONSE 6:

As described in response to Question 5 above, SDG&E and SoCalGas would attempt to acquire supply on the El Paso South Mainline and schedule it for transportation on the North Baja, Gasoducto Rosarito, and TGN pipelines for delivery at the Otay Mesa receipt point if demand is expected to exceed the reduced capacity of the SDG&E system. Failing that, SDG&E would implement curtailment on its system per SDG&E Gas Rule No. 14.

Estimated net cost to procure and transport this supply across the three pipeline systems would be approximately 30-40 cents per decatherm.

Quantity of gas would be from 0-100 MMcfd dependent on amount of forecast demand in excess of SDG&E reduced system capacity.

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Amended Response Submitted: March 6, 2017**

AMENDED

The response to Question 7.b has been amended, changes are noted in **red bold and underline.**

QUESTION 7:

Please describe if SoCalGas and SDG&E believe the availability and cost of gas delivered on a firm basis from Otay Mesa that would allow Line 1600 to be hydro-tested sooner and continuously rather than later and seasonally. Please describe the basis for this thinking.

- a. Identify the quantity of gas required at Otay Mesa and how soon hydro-testing could begin as follows:
 - i. Identify the firm capacity currently delivered through Line 1600 (for core and noncore),
 - ii. Identify the firm capacity displaced by de-rating Line 1600 (for core and noncore),
 - iii. Identify the firm capacity required at Otay Mesa to maintain reliability on the SDG&E system (for core and noncore),
 - iv. Identify the cost impact on ratepayers, and
 - v. Identify how soon hydro-testing could begin.

- b. If firm gas is unavailable from Otay Mesa, provide a detailed explanation for why not.

RESPONSE 7:

- a.
 - i. The nominal capacity of Line 1600 is 100 MMcfd.
 - ii. Derating Line 1600 to 320 psig reduces the nominal capacity of the SDG&E system by 60 MMcfd.
 - iii. SDG&E and SoCalGas interpret this question as seeking the volume of supply delivered at Otay Mesa necessary to restore the SDG&E system capacity under the scenario described. 60 MMcfd of supply would be required at Otay Mesa to recover the nominal capacity of the SDG&E system.
 - iv. The incremental cost to transport gas through Otay Mesa to facilitate hydrotesting is estimated at approximately \$20.2 million (excluding commodity costs) if capacity is available for transportation capacity across three different pipeline systems, the North Baja system in southeast California (south through Imperial County), the Gasoducto Rosarito (GR) system east to west across North Baja just south of the

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Mexican border, and the Transportadora de Gas Natural de Baja California (TGN) system that delivers gas to the SDG&E/SoCalGas system at the custody transfer point at Otay Mesa.

- v. Hydrotesting could begin in about 18 months once a decision is made to move forward with testing and it is estimated that it will take 2 ¾ years to complete a continuous hydrotesting effort for the entire length of Line 1600. 2 ¾ years is the time required to engineer the testing plan, obtain permits, secure materials and complete the construction/testing activities.

Hydrotesting of Line 1600 is a complicated task with many considerations that will need to be carefully planned. A primary consideration is how to maintain service to existing customers that are served directly from this line while the line is being hydrotested. Initial analysis shows that the line cannot be tested in one test, but must be broken up in numerous smaller test segments that are tested independently. The timing of the tests is also an important consideration as taking segments out of service for testing impacts system capacity which is especially important during peak winter and summer demand periods.

Detailed information on potential timelines associated with hydrotesting Line 1600 can be found in information submitted as part of the subject application. Specifically reference the third chart labeled “Option 3- Testing All Months” submitted as part of attachment VI contained within Attachment B of the Prepared Direct Testimony of Neil Navin in A.15-09-013:

https://www.sdge.com/sites/default/files/regulatory/A.15-09-013%20Prepared%20Direct%20Testimony%20of%20N.%20Navin%203-21-16_0.pdf

Given the time required to complete the hydrotest and the fact that the hydrotesting of Line 1600 is the “No Project Alternative” submitted in A.15-09-013, it is imperative that the process associated with arriving at a decision related to application.15-09-013 be started and completed in a timely manner. The fundamental purpose of the proposed Pipeline Safety & Reliability Project is to comply with California Public Utilities Code (P.U. Code) Section 958 and Commission Decision 11-06-017 to implement SDG&E’s and SoCalGas’ Pipeline Safety Enhancement Plan (PSEP), which per P.U. Code Section 958, requires action to be taken as soon as practicable

- b. Gas supply delivered to the Otay Mesa receipt point would need to be supplied from the El Paso Natural Gas (EPNG) South Mainline at Ehrenberg, AZ via the Northern Baja

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Alternative that includes three different pipelines systems, the North Baja system in southeast California (south through Imperial County), the Gasoducto Rosarito (GR) system east to west across North Baja just south of the Mexican border, and the Transportadora de Gas Natural de Baja California (TGN) system that delivers to the Gas System at Otay Mesa.

Firm gas supply is readily available for purchase from EPNG South Mainline shippers. Limitations on firm capacity available on the GR system could limit the availability of firm gas supply delivered at Otay Mesa to **20** MMcfd.