

**APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR AUTHORITY TO RECOVER
VENTURA COMPRESSOR MODERNIZATION PROJECT REVENUE REQUIREMENT IN
CUSTOMER RATES AND FOR APPROVAL OF RELATED COST ALLOCATION AND RATE
DESIGN PROPOSALS (A.23-08-019)
(DATA REQUEST CAUSE-SCG-03)**

Date Requested: October 31, 2023, Submitted: November 14, 2023

QUESTION 1: With regard to the All-Electric Compressor Alternative, the PEA states on page 4-9 that “the electric load for four new electric compressors would require on-site infrastructure, such as a substation. Based on preliminary analysis, approximately 10 megawatts (MW) of electric power would be needed.”

- a. Please provide the preliminary analysis referenced in the above statement and any subsequent analysis regarding on-site infrastructure and/or new electric power generation needed to serve electric load from electric compressors.
- b. What is the maximum electric compressor capacity that could operate at the Ventura Compressor Station that would not require a new substation, other major electrical upgrade and/or deployment of additional electric generation. Please provide all analysis supporting this response.

RESPONSE 1:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

- a. SoCalGas performed a preliminary analysis in August 2021 to evaluate the electric load needed for four (4) electric motor-driven compressors (EDC). A load list reflecting this equipment configuration is attached, which shows estimated load of 10,225 KW (which is equivalent to 10MW). Prior to the August 2023 CPCN Filing with PEA, SCG also completed a conceptual analysis for an electrical substation with two separate circuits to meet the 10MW station load. Please reference the attachment:
VCM_A2308019_CAUSE_SCG_03_Q01_Attach_02_Plot_Space_SCE_Substation_2_66_KV_Lines.

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Backup power is critical for operating the facility in an all-EDC configuration. SoCalGas conceptually evaluated backup power options which included linear generators, solar, battery energy storage, fuel cells, and natural gas-powered backup generation. The conceptual evaluations examined if these technologies could provide backup power in a compressor station application, and if they meet existing footprint requirements.

- Linear generators can use natural gas as a fuel, but the technology is very new and has not been utilized for compressor station applications on our system. Conceptually, this may require approximately forty 250 kW linear generator units for the back-up power application. Based upon a conceptual review of the Ventura Compressor Station plot, the facility does not have enough space to accommodate the linear generator back-up system and sustain needed operational access requirements.
- A utility-scale solar power plant may require between 5 and 10 acres per megawatt (MW) of generating capacity (SEIA 2021¹). Given the baseline power needed, a minimum of 50 acres would be necessary, which would not be feasible on the existing location because it is an approximately 8-acre property.
- A battery energy storage system (BESS) was also considered as part of this evaluation. BESS consists of individual batteries grouped into modules that are housed in climate-controlled containers typically 20 to 40 feet in length, about 10 feet in height and 10 feet in width (Dubarry et al. 2021²). However, “most large-scale batteries currently use lithium-ion technology and can discharge for about four hours at most” (Blunt 2022³). The length of time that a BESS could supply power would be contingent on the size and capacity of the BESS.
- Fuel cells directly convert chemical energy to electricity, however, fuel cells are not optimal for back-up applications due to the limitations imposed by a 8-to-12-hour start-up time.
- Conceptual plot plans were also developed for gas turbine package option (see attachment: VCM_A2308019_CAUSE_SCG_03_Q01_Attach_01_Plot_Space_Gas_Turbine_Generator_Pack age). The Ventura station does not have enough space to accommodate both the gas turbine generator package and SCE substation, and still meet Ventura County Fire Department,

¹ SEIA (Solar Energy Industries Association). 2021. “Siting, Permitting & Land Use for Utility-Scale Solar.” Accessed online December 8, 2021: <https://www.seia.org/initiatives/siting-permitting-land-use-utility-scale-solar>.

² Dubarry, M., M. Tun, G. Baure, M. Matsuura, and R.E. Rocheleau. “Battery Durability and Reliability under Electric Utility Grid Operations: Analysis of On-Site Reference Tests.” *Electronics* 2021, 10, 1593. <https://doi.org/10.3390/electronics10131593>.

³ Blunt, K. “America’s Power Grid is Increasingly Unreliable.” *Wall Street Journal*. February 18, 2022. Accessed online February 18, 2022: <https://www.wsj.com/articles/americas-power-grid-is-increasingly-unreliable-11645196772>.

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Standard 501 which requires emergency vehicle access of 20-foot minimum⁴. Furthermore, the plot plan does not account for operational access requirements.

Attachments:

- VCM_A2308019_CAUSE_SCG_03_Q01_Attach_01_Plot_Space_Gas_Turbine_Generator_Package
 - VCM_A2308019_CAUSE_SCG_03_Q01_Attach_02_Plot_Space_SCE_Substation_2_66_KV_Lines
 - VCM_A2308019_CAUSE_SCG_03_Q01_Attach_03_Load List_10MW
- b. The maximum number of electric compressors that could operate at the Ventura Compressor Station that would not require a new substation is 2.

⁴ [501-Fire-Apparatus-Access-Standard.pdf \(pcdn.co\)](#)

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QUESTION 2: Page 2-8 of the PEA states that “The design of a distribution system is based upon the minimum pressure that it expects to receive from the supplying transmission line.”

- a. What is the minimum pressure needed to maintain continuous service to customers on the North Coastal System.

RESPONSE 2:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

The minimum pressure needed to maintain continuous service to customers on the North Coastal transmission system ranges from 100 to 800 psig, depending on the location.

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QUESTION 3: Page 2-8 of the PEA states that “Because the minimum suction pressure is fixed and the required discharge pressure is fixed, the only way to increase throughput is to install additional horsepower.”

- a. What is the minimum suction pressure referred to in this sentence. (CAUSE seeks a numerical response to this question)
- b. Please explain why minimum suction pressure is fixed.
- c. What is the required discharge pressure referred to in this sentence. (CAUSE seeks a numerical response to this question.
- d. Please explain why discharge pressure is fixed.

RESPONSE 3:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. SoCalGas additionally objects to this request on the grounds certain of the information sought is publicly available, and thus equally available to the requesting entity. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

Please refer to Table 1 on page 34 of the CPCN Application for design pressures and flowrates. As stated on page 2-7 of the PEA, “The maximum pressure limit is set to ensure the structural integrity of the pipeline, while the minimum pressure limit is set to maintain adequate service to customers or processes.” The minimum suction pressure is fixed because the distribution system is designed to operate at the minimum pressure. The maximum operating pressure of the pipeline is set in accordance with CFR 192.619 and is set to ensure this limit is not exceeded at any time.

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QUESTION 4: Page 2-8 of the PEA states that “This minimum suction pressure and the discharge pressure requirement, along with the throughput volume, will determine the horsepower compression requirement needed.”

- a. Please provide the inputs (e.g. suction pressure, discharge pressure, throughput volume) and the calculation from which SoCalGas determined the horsepower compression requirement for the Project.

RESPONSE 4:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. SoCalGas additionally objects to this request on the grounds certain of the information sought is publicly available, and thus equally available to the requesting entity. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

Please refer to Response 3 of this data request for the suction pressure, discharge pressure, and throughput volume.

The horsepower for the gas driven compressors was determined during the Front-End Engineering Design (FEED)⁵ phase completed in February 2020. During this phase, the project design parameters such as suction pressure, discharge pressure, summer and winter ambient temperatures, station throughput along with data sheets and specifications were used by the compressor vendor to calculate the horsepower using their proprietary sizing software.

⁵ FEED was completed based on the project design then selected for four new 1,900 HP gas compressors.

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QUESTION 5: Page 2-8 of the PEA states that “The average daily summer demand used in the design on the Project is 60 MMcfd.”

- a. Please state the calendar dates spanning “summer” referred to in this sentence.
- b. Please explain how the 60 MMcfd average daily summer demand was derived (e.g. based on historical demand, a projection of future demand and if so, for what year etc).
- c. Please provide the average daily summer demand on the North Coastal System for the past 10 years. Please provide the total average as well as the average daily summer demand by customer class (e.g. residential, core C&I, noncore C&I, enhanced oil recovery (EOR) and electric generation (EG)).

RESPONSE 5:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. SoCalGas additionally objects to this request on the grounds certain of the information sought is publicly available, and thus equally available to the requesting entity. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

- a. The term is intended to refer to the summer operating season, which is the 214 days from April 1 through October 31.
- b. 60 MMcfd is the approximate forecasted average daily demand for a cold year on the North Coastal System for the 214-day summer operating season, derived from the 2014, 2016, and 2018 California Gas Reports for the year of the report. As further described on page 20 of the Application, “gas demand in the North Coastal System has remained relatively constant over the past decade.”
- c. In order to determine whether information was sufficiently aggregated to comply with applicable confidentiality laws, a 15/15 Rule analysis was applied. The 15/15 Rule comes from

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the Public Utilities Commission’s decisions setting forth a mechanism for assessing whether customer usage data is sufficiently aggregated to protect customer confidentiality. The 15/15 Rule generally provides that aggregated or anonymized customers’ specific information must be made up of at least 15 customers and a single customer’s load must be less than 15% of an assigned category. If the number of customers in the compiled data is less than 15, or if a single customer’s load is more than 15% of the total data, the 15/15 Rule provides for combining categories or removing non-conforming customer information before the information is released, or otherwise protecting the customer information from public disclosure. Accordingly, the noncore customer classes (noncore C&I, enhanced oil recovery (EOR) and electric generation (EG)) average daily summer demand data is aggregated.

Average Summer Daily Mmcf/d

Year	Residential	Core C&I	Noncore	TT_Mmcf/d
2014	15.49	11.55	20.59	47.63
2015	15.04	12.10	18.99	46.14
2016	16.21	12.65	19.78	48.64
2017	16.39	12.51	19.35	48.26
2018	17.72	13.57	17.59	48.88
2019	17.42	13.49	18.51	49.43
2020	18.61	11.59	14.76	44.96
2021	18.84	13.99	15.98	48.80
2022	16.44	13.36	17.05	46.86
2023	19.38	13.78	12.70	47.36
10-YR Avg	16.91	12.76	18.07	47.73

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QUESTION 6: Page 2-8 of the PEA states that “With the decline of local natural gas production, the only other possible supply in the North Coastal System is from PG&E Line 306, which can supply up to 30 MMcfd.” SoCalGas response to Data Request CAUSE-SCG-01, Q. 9(b) states that “SoCalGas has the ability to receive up to 40 MMcfd of supply at Morro Bay.”

- a. Please explain the discrepancy between the 30 MMcfd of supply stated on Page 2-8 of the PEA and the 40 MMcfd of supply stated in response to CAUSE-SCG-01 Q.9.

RESPONSE 6:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

CAUSE-SCG-01 Q. 9(b) asks about the maximum quantity of gas per year that can be supplied, which includes the winter operating season. The paragraph referenced in the PEA discusses the capacity during the summer injection season, when customer demand is less. As stated in Response 9(b) to CAUSE-SCG-01, “This does not imply that 40 MMcfd or any other level of supply at Morro Bay could be received on any given day,” and as stated in the PEA page 2-8, “...this supply is not guaranteed.”

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QUESTION 7: Exhibit 2-5 on Page 2-11 of the PEA provides a graph showing the La Goleta Storage Field inventory levels from 2015 to 2023.

- a. Please provide a table with the maximum and minimum inventory levels in bcf from 2015 to 2023 with the day of the year of the maximum and minimum inventory level.

RESPONSE 7:

SoCalGas objects to this request on the grounds it is not relevant, overly broad, and unduly burdensome pursuant to Rule 10.1 of the Commission’s Rules of Practice and Procedure, which provides for discovery of “any matter, not privileged, that is relevant to the subject matter involved in the pending proceeding, if the matter either is itself admissible in evidence or appears reasonably calculated to lead to the discovery of admissible evidence, unless the burden, expense, or intrusiveness of that discovery clearly outweighs the likelihood that the information sought will lead to the discovery of admissible evidence.” SoCalGas further objects to this request on the grounds it is compound. SoCalGas additionally objects to this request on the grounds certain of the information sought is publicly available, and thus equally available to the requesting entity. Moreover, SoCalGas objects to the definitions and instructions on the grounds that they are overbroad and unduly burdensome; special interrogatory instructions of this nature are expressly prohibited by California Code of Civil Procedure Section 2030.060(d). Subject to and without waiving the foregoing objections, SoCalGas responds as follows.

Please see the below table for the minimum and maximum inventory by year and corresponding date for the La Goleta Storage Field from 2015 through November 1, 2023.

Year	Max Date	Max (Bcf)	Min Date	Min (Bcf)
2015	11/6/2015	20.5	1/23/2015	16.3
2016	7/24/2016	21.1	3/15/2016	18
2017	12/3/2017	18.7	4/13/2017	10.1
2018	11/2/2018	20.7	4/10/2018	13
2019	12/31/2019	17.4	3/15/2019	8.2
2020	10/24/2020	20.9	3/28/2020	13.6
2021	11/12/2021	21.4	3/27/2021	15.5
2022	8/23/2022	21.2	12/31/2022	14.4
2023 (Through 11/1/23)	10/31/2023	18.2	3/23/2023	8.4