Docket:	A.19-06-016
Exhibit Number:	CalPA **404**
Reference Number:	CalAdvocates-**03**
Date Served:	March 24,2021
Commissioner:	C. Rechtschaffen
Admin. Law Judge:	Poirier/Kenney

THE PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

Order Instituting Investigation on the Commission's Own Motion into the Operations and Practices of Southern California Gas Company with Respect to the Aliso Canyon storage facility and the release of natural gas, and Order to Show Cause Why Southern California Gas Company Should Not Be Sanctioned for Allowing the Uncontrolled Release of Natural Gas from Its Aliso Canyon Storage Facility

Cal Advocates Response to SoCalGas DR-01

San Francisco, California
March 24, 2021

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California Public Utilities Commission

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PUBLIC ADVOCATES OFFICE RESPONSES TO SOUTHERN CALIFORNIA GAS COMPANY'S FIRST SET OF DATA REQUESTS

Order Instituting Investigation into SoCalGas' Practices and Operations of the Aliso Canyon Storage Facility and the Uncontrolled Release of Natural Gas, I.19-06-016

Data Request No: SoCalGas-CalAdvocates-01

Date of This Request: January 9, 2020

Response Date: January 24, 2020

GENERAL OBJECTIONS

The Public Advocates Office provides the following Responses (Responses) to Southern California Gas Company's (SoCalGas) First Set of Data Requests to the Public Advocates Office dated January 9, 2020 (SoCalGas DR 1). Questions from SoCalGas DR 1 are reproduced below, followed by Public Advocates Office Responses, solely for ease of reference. The Public Advocates Office does not adopt or admit any question or any portion of any question as correct or true. The Public Advocates Office 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). Responses pertaining to questions of law or legal conclusions have been prepared with the assistance of counsel.

The Public Advocates Office objects to each data request to the extent it mischaracterizes Public Advocates Office Opening Testimony.

The Public Advocates Office objects to each data request to the extent it is overly broad, unduly burdensome, or not reasonably calculated to lead to the discovery of admissible evidence.

The Public Advocates Office objects to each instruction, definition, and data request to the extent that it seeks information or documents protected from disclosure by the attorney-client privilege, attorney work product doctrine, or any other applicable privilege.

The Public Advocates Office objects 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 SoCalGas from SoCalGas's own files, from documents or information in SoCalGas's possession, or from documents or information that SoCalGas previously produced to the Public Advocates Office. Responding to such requests would be oppressive, unduly burdensome, and unnecessarily expensive, and the burden of responding to

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such requests is substantially the same or less for SoCalGas as for the Public Advocates Office. All such documents and information will not be produced.

The Public Advocates Office incorporates 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.

DATA REQUESTS AND RESPONSES

YOU allege on page 5 of YOUR PREPARED TESTIMONY that had "SoCalGas management acted in accordance with recommendation from its staff, corrosion issues for SS-25 could have been identified, monitored, and remediated decades prior to the Leak." YOU further allege on page 9 of YOUR PREPARED TESTIMONY that had "SoCalGas' management properly administered the program, the corrosion issues on SS-25 would have been timely identified." With these references in mind, please answer the following:

Question 1

Please identify the earliest date that YOU contend SoCalGas could have identified "corrosion issues" in SS-25.

Response to Question 1

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation of its wells contrary to Public Utilities (PU) Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office Opening Testimony (Opening Testimony), pages 3-5, which states:

> In 1988, SoCalGas began a program to perform casing integrity logs (known as Vertilog) and hydrostatic pressure testing on 20 candidate wells, including SS-25….
>
> Vertilog logging inspections were [ultimately] performed on only seven of the 20 wells, which did not include SS-25. Moreover, only five of the seven logged wells have surviving records. Of the five wells with surviving records, each included corrosion indications of at least 20 percent loss in wall thickness, with one well having an indication of over 60 percent loss in wall thickness….

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> … Given the condition of the inspected wells (as indicated by the 20 percent or greater corrosion rate and the subsequent remediation), a prudent manager would have inspected the remaining 13 candidate wells to ensure the absence of similar integrity issues. SoCalGas' management, however, failed to undertake a timely inspection of these wells, including SS-25, and consequently failed to identify and address corrosion issues. (Footnotes omitted)

Please also see Blade Report Root Cause Analysis of the Uncontrolled Hydrocarbon Release from Aliso Canyon (Blade Report), Volume 4, at page 2, which states: "There is no way to know what an inspection of the SS-25 casing would have shown in 1988, but it is possible that corrosion was present and detectable, and steps could have been taken to avoid the leak in 2015."

The Public Advocates Office contends that corrosion issues in SS-25 could have been identified as early as 1988 if SoCalGas had fully implemented its proposed 1988 Vertilog and hydrostatic pressure testing program.

Question 2

Please identify all tools available in or around 1988 that were capable of detecting corrosion on the outer diameter of casings in gas storage wells.

Response to Question 2

The Public Advocates Office objects to this question as vague and ambiguous, particularly as to the phrase "tools." The Public Advocates Office also objects to this question on the ground that SoCalGas attempts to shift the burden of investigation of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Pressure testing was an available method of identifying the integrity of casings in gas storage wells in 1988. (*See* Blade Report, page 197, Section 4.6.1: "Section 1724.10(j)(1): MIT Part 1. Prior to commencing injection operations, each injection well must pass a pressure test of the casing-tubing annulus to determine the absence of leaks." SS-25 was pressure tested in 1973, 1976, and 1979.) Please also see Opening Testimony, page 6, which states: "…SoCalGas could have proceeded with testing the integrity of the 13 remaining wells through pressure testing, as originally proposed in the 1988 Interoffice Memo. While SoCalGas may have originally planned for the pressure testing to identify leaks at casing collars, pressure testing would also have assessed the mechanical integrity of the wells." (Footnotes omitted).

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Question 3

Please identify the minimum amount of corrosion or metal loss that YOU contend would necessitate remediation.

Response to Question 3

The Public Advocates Office objects to this question as vague and ambiguous, particularly as to the phrase "necessitate remediation." The Public Advocates Office also objects to this question on the ground that SoCalGas attempts to shift the burden of investigation of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

There is no minimum amount of corrosion or metal loss that should necessitate remediation; instead, once the wellbore is proven to be found in a corrosive environment, such a finding would "necessitate immediate remediation." Thus, once SoCalGas found that its wells had come in contact with the corrosive environment, SoCalGas should have taken action to remediate any corrosion issues. As to SS-25 specifically, despite knowledge that its wells existed in a corrosive environment, SoCalGas performed no wall thickness inspections or any other corrosion remediation measures from the time when Vertilog results in similar wells showed corrosion issues in 1988 until the leak occurred on October 23, 2015.

Question 4

Please identify all LAWS in effect as of 1988 that required gas storage operators to perform Vertilog testing of casings in gas storage wells.

Response to Question 4

The Public Advocates Office objects to this question on the ground that information responsive to this question is equally available and is known, or should be known, to SoCalGas. The Public Advocates Office further objects that this question calls for a legal conclusion. As this question pertains to questions of law or legal conclusions, it has been prepared with the assistance of counsel.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

PU Code Section 451 states: "Every public shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities … as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

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YOU allege on pages 8-9 of YOUR PREPARED TESTIMONY that:

> Using an assumption that the production casings of each well would have had 0 percent Outer Diameter (OD) penetration (wall thickness loss) at the time they were installed and the percentage of OD Penetration found by the Vertilog results in 1988, it is possible to estimate a localized linear corrosion rate in units MPY. From the results in Table 1, the wells given Vertilog inspections had a corrosion rate from 1.4 to 4.6 MPY.39 Given the almost 5 MPY corrosion rate and an existing wall thickness loss exceeding 60 percent, the wall thickness would be reduced to 80 percent in as few as 14 years, or by 2002. [Footnote 40 omitted] … SoCalGas failed to perform this basic corrosion rate calculation with the 1988 Vertilog results, leaving SoCalGas' management uninformed and unable to assess the risk of casing failure events.

Footnote 39 provides the following citation:

> In an open water system, a corrosion rate of around 1 MPY is normal. Having corrosion rate of around 10 [MPY], you should take action. Corrosion rates of 20 MPY and above, you should be concerned, as the corrosion is "eating" the metal rather fast. Merus Oil and Gas, https://www.merusonline.com/mpy-milsper-year/.

With this reference in mind, please answer the following:

Question 5

Please describe YOUR basis, including any supporting literature or analysis, for assuming a "linear" rate of corrosion to estimate the rate of metal loss.

Response to Question 5

There are several assumptions that can be made for the corrosion rate of Aliso Canyon's production casings (i.e., linear, exponential, logarithmic). The assumption of a linear rate of corrosion is the most conservative estimate for this corrosion rate assessment that still fits the data presented by the Blade Report. Please see Blade Report, pages 123-124:

> The failure occurred through a patch of corrosion. This patch of corrosion was characterized by striated grooves, and the ends of the groove had a sharp 'V' shape. Further, these grooves consisted of grooves within, almost fractal in nature. Examination of the ends of the grooves revealed tunnels that began at the emds pf the groove and that penetrated parallel to the groove into the metal. One sample revealed the formation of multiple parallel tunnels that aligned and developed into grooves.
>
> … Many of these descriptions of corrosion deposits have been identified in literature as caused by MIC. The literature data were generated from controlled experiments with deliberate exposure to microbes.

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> …
>
> The SS-25 well was originally constructed as an oil well with the 7 in. production casing. The top of the cement on the 7 in. casing was around 7,000 ft and above the cement was drilling fluid. Based on the available data, this fluid would have had a pH ranging from 10.5 to 12.5 at the time of well construction.… The drilling fluid either leaked off or was displaced with ground water over time.
>
> … The microbiological organisms grew in population and caused physio-chemical reactions that likely caused the corrosion process to occur. The corrosion rates would have been quite low, on an average of 5 to 10 mpy. This is expected because, as corrosion occurs, a scale is formed on steel surface and there is no mechanism of removal of this scale. Any further corrosion requires mass transfer through the scale. The corrosion rates are anticipated to be low in a relatively stagnant environment.…

A logarithmic corrosion rate would best fit an environment where most of the corrosion occurs immediately after the production casing comes in contact with the corrosive environment. The Blade Report finds that a period of time must have passed while the high pH drilling fluid was displaced before microbes could begin corroding the casing. A logarithmic assumption, therefore, does not match the data put forth by the Blade Report, so it was rejected.

An exponential corrosion rate may have been a reasonable fit for the corrosion occurring on the production casing. Corrosion as a process is a function of the surface area of the production casing in contact with the corrosive aqueous environment. As more of the surface of the casing is corroded and more "grooves and tunnels" appear, more surface area of the production casing comes in contact with the corrosive environment. This leads to more corrosion, which in turn increases the surface area by creating more grooves and tunnels. This corrosion of the outer diameter of the production casing therefore fits an exponential corrosion rate.

However, an issue with assuming an exponential corrosion rate is that in order to accurately document the nature of the corrosion, at least three data points are needed to fit the curve. Since SoCalGas has provided proof of only one wall thickness examination on its wellbores in their more than 60-year lifespan (Vertilog testing in 1988), there is not enough data to accurately estimate the exponential nature of the corrosion. Had SoCalGas performed other regular wall thickness measurement inspections, those data points may have better fit an exponential rate of corrosion to the wellbores.

As a result, the only available assumption is a linear local approximation of corrosion, which is a conservative estimate given the lack of data taken by SoCalGas. With the one wall thickness measurement in 1988 (for 7 of the 20 prioritized wells), and an assumption that the production casing was placed into the ground with a 0% Wall Thickness loss, it is possible to approximate a constant rate of corrosion while the casing was in the ground. This linear assumption balances the exponential growth of surface area in contact with the corrosive environment with Blade

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Report's explanation of "scale formation" on the steel, which could have slowed corrosion of previously exposed casing.

It is important to note that this assumption would overestimate corrosion early in the lifespan of the production casing and underestimate the corrosion late in the corrosion's lifespan. However, by the time 60% Wall Thickness loss had been identified by Vertilog testing of similar casings, linear approximation would have been the conservative estimate. As time went on, actual corrosion rate would likely be a much larger MPY ("Mils Per Year") corrosion rate than the available linear assumption. The Blade Report accounts for this issue when it estimates the corrosion rate as "an average of 5 to 10 mpy."

Question 6

Please state all facts supporting YOUR assumption that the corrosion of SS-25 occurred in a linear fashion.

Response to Question 6

Please see Public Advocates Office's response to Question 5.

Question 7

Assuming the accuracy and reliability of YOUR corrosion rate calculation for Porter 37 (4.5 MPY as of 1988), what remedial action(s), if any, do YOU contend SoCalGas should have taken in or around 1988 respecting well Porter 37?

Response to Question 7

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Opening Testimony, page 9, which states: "Given the poor condition of the inspected wells, it would have been prudent for SoCalGas management to confirm that the remaining 13 wells did not also have compromised integrity. SoCalGas management failed to do so. Instead it claimed that continued Vertilog inspections would not have achieved SoCalGas' intended purposes of the 1988 program. Even if this claim is correct, SoCalGas' management could still

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have confirmed the integrity of the remaining 13 wells through other measures, such as pressure testing, as SoCalGas had originally proposed."

Please also see the Blade Report, page 219:

> When a failure of some component in a system occurs, it is not uncommon to conduct a failure analysis depending on the severity of the failure and its consequences. The purpose of the failure analysis is to determine why it happened, how to prevent its recurrence, and, of equal importance, determine if it was because of an isolated problem or if it was a potentially systemic problem. If the problem appears to be systemic, then a risk assessment is commonly done to determine the likelihood of the failure occurring elsewhere, what the potential consequences might be, and how tolerable the risk is. With this understanding of the nature of the problem and potential risks, existing procedures can then be changed or new ones developed to monitor and mitigate the risks.
>
> … Blade's review of the Aliso Canyon well files shows that 40% of the wells had casing failures (leaks, tight spots, parted casing) with an average of 2 failures per well (99 failures in 49 wells).
>
> … Despite this, there is no evidence that SoCalGas conducted a formal failure analysis or follow-up risk assessment on any of the casing failures to determine why they occurred. Nor was there an investigation of the reasons for, and the potential consequences of, the corrosion.

Question 8

Assuming the accuracy and reliability of YOUR corrosion rate calculations for Porter 46 (1.4 MPY as of 1988), what remedial action(s), if any, do YOU contend SoCalGas should have taken in or around 1988 respecting well Porter 46?

Response to Question 8

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office's response to Question 7.

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Question 9

Assuming the accuracy and reliability of YOUR corrosion rate calculations for Standard Sesnon 8 (3.0 MPY as of 1988), what remedial action(s), if any, do YOU contend SoCalGas should have taken in or around 1988 respecting well Standard Sesnon 8?

Response to Question 9

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office's response to Question 7.

Question 10

Assuming the accuracy and reliability of YOUR corrosion rate calculations for Standard Sesnon 9 (1.5 MPY as of 1988), what remedial action(s), if any, do YOU contend SoCalGas should have taken in or around 1988 respecting well Standard Sesnon 9?

Response to Question 10

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office's response to Question 7.

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Question 11

Assuming the accuracy and reliability of YOUR corrosion rate calculations for Frew 4 (4.6 MPY as of 1988), what remedial action(s), if any, do YOU contend SoCalGas should have taken in or around 1988 respecting well Frew 4?

Response to Question 11

The Public Advocates Office objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office's response to Question 7.

Question 12

Assuming that as of 1988 SS-25 had a "normal" corrosion rate of "around 1 MPY," as cited in footnote 39 of YOUR PREPARED TESTIMONY, what remedial action(s), if any, do YOU contend SoCalGas should take taken?

Response to Question 12

The Public Advocates Office objects to this question as it mischaracterizes the Opening Testimony. The Public Advocates Office further objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Question 12 mischaracterizes the findings of the Blade Report, which determined the corrosion rates to have been 'an average of 5 to 10 mpy." (Blade Report, page 124.) Further, please see Public Advocates Office's response to Question 7.

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Question 13

Please identify all LAWS in effect as of 1988 that required gas storage operators to perform corrosion rate calculations for gas storage wells.

Response to Question 13

The Public Advocates Office objects to this question on the ground that information responsive to this question is equally available and is known, or should be known, to SoCalGas. The Public Advocates Office further objects that this question calls for a legal conclusion. As this question pertains to questions of law or legal conclusions, it has been prepared with the assistance of counsel.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

PU Code Section 451 states: "Every public shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities … as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

YOU allege on page 11 of YOUR PREPARED TESTIMONY that: "[t]he fact that SS-25 was not cathodically protected, replaced, or taken out of service prior to the Leak meant that the corrosion was unmitigated." With this reference in mind, please answer the following:

Question 14

Do YOU contend that SoCalGas should have applied cathodic protection to SS-25?

Response to Question 14

The Public Advocates Office objects to this question as it mischaracterizes the Opening Testimony. The Public Advocates Office further objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

If cathodic protection were applied to SS-25 prior to the invasion of groundwater, the resulting corrosion would not have occurred. Please also see the Blade Report, page 215: "For the 7 in. casing to have corroded, it must have been in direct contact with an environment that allowed the corrosion mechanism to exist, and a corrosion protection mechanism must have been absent. Cathodic protection systems, for example, are commonly used to protect pipelines from

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corrosion and are sometimes used on surface casing strings. While a cathodic protection system would have provided corrosion protection to the 11 3/4 in. casing, it would not have protected the 7 in. casing inside the 11 3/4 in. casing"

Question 15

Do YOU contend that cathodic protection would have prevented the SS-25 LEAK?

Response to Question 15

The Public Advocates Office objects to this question as it mischaracterizes the Opening Testimony. The Public Advocates Office further objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

Please see Public Advocates Office's response to Question 14.

YOU allege on page 11 of YOUR PREPARED TESTIMONY that:

> PU Code Section 451 mandates SoCalGas to operate its wells in a manner that promotes the safety and health of the public. This may include, for example, taking proactive actions to prevent a gas leak by carrying out technical analyses, inspecting of testing the wells (e.g., for well corrosion, for the strength of the well casing to withstand high pressure, etc.). Had SoCalGas taken such preventative measures in due time, it may have been able to prevent the SS-25 failure, which resulted in negative consequences to the health and safety of the public. However, SoCalGas failed to do so.

(Internal footnotes omitted). With this reference in mind, please answer the following:

Question 16

Please identify all LAWS in effect at the time of the LEAK that required gas storage operators to carry out "technical analyses" as used in the above passage from YOUR PREPARED TESTIMONY.

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Response to Question 16

The Public Advocates Office objects to this question on the ground that information responsive to this question is equally available and is known, or should be known, to SoCalGas. The Public Advocates Office further objects that this question calls for a legal conclusion. As this question pertains to questions of law or legal conclusions, it has been prepared with the assistance of counsel.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

PU Code Section 451 states: "Every public shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities … as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

Question 17

Please identify all LAWS in effect at the time of LEAK that required gas storage operators to "inspect[] or test[] the wells (e.g., for well corrosion, for the strength of the well casing to withstand high pressure, etc.)" as used in the above passage from YOUR PREPARED TESTIMONY.

Response to Question 17

The Public Advocates Office objects to this question on the ground that information responsive to this question is equally available and is known, or should be known, to SoCalGas. The Public Advocates Office further objects that this question calls for a legal conclusion. As this question pertains to questions of law or legal conclusions, it has been prepared with the assistance of counsel.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

PU Code Section 451 states: "Every public shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities … as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

Question 18

Do YOU contend that Public Utilities Code section 451 imposes a STRICT LIABILITY standard of liability?

Response to Question 18

The Public Advocates Office objects to this question on the ground that information responsive to this question is equally available and is known, or should be known, to SoCalGas. The Public

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Advocates Office further objects that this question calls for a legal conclusion. As this question pertains to questions of law or legal conclusions, it has been prepared with the assistance of counsel.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

The language of PU Code Section 451 speaks for itself.

YOU allege on pages 15-16 of YOUR PREPARED TESTIMONY "seven incidents involving missed compliance actions on surveys and inspections done for SS-25." The dates of these seven alleged "missed compliance actions range from the year 2000 through 2013." With this reference in mind, please answer the following:

Question 19

Did any of the seven surveys or inspections for SS-25 document any anomalies regarding the condition of SS-25?

Response to Question 19

The Public Advocates Office objects to this question as vague and ambiguous, particularly as to the phrase "anomalies regarding the condition of SS-25." The Public Advocates Office also objects to this question as it mischaracterizes the Opening Testimony. The Public Advocates Office further objects to this question on the ground that SoCalGas attempts to shift the burden of investigation and maintenance of its wells contrary to PU Code Section 451. The Public Advocates Office further objects to the question on the grounds that this question is unduly burdensome in that it requires the Public Advocates Office to gather and analyze all the information that is or was in SoCalGas's sole possession and control. The Public Advocates Office further objects that information responsive to this question is in SoCalGas's sole possession and control.

Subject to and without waiver of the foregoing objections, the Public Advocates Office responds as follows:

The information available from the seven incidents involving missed compliance by SoCalGas is insufficient to make any conclusion regarding the actual condition of SS-25. Only two of the seven surveys or inspections are specific to SS-25. The remaining five surveys or inspections pertain to a group of wells, which include, but do not speak specifically to, SS-25.

END OF DATA REQUESTS AND RESPONSES