



SOUTHWEST GAS CORPORATION

Jerome T. Schmitz, P.E., Vice President/Engineering

February 24, 2016

Via Email and U.S. Mail

Mr. Kenneth Bruno
Program Manager
Gas Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission
320 West 4th Street, Suite 500
Los Angeles, CA 90013

Subject: General Order (G.O.) 112 Inspection of Southwest Gas Corporation, South and North Lake Tahoe and Truckee, Districts 14, 15 and 16

Dear Mr. Bruno,

Southwest Gas Corporation (Southwest Gas or Company) respectfully submits the following response to the "Summary of Inspection Findings" (Summary) issued by the Safety and Enforcement Division (SED) on January 25, 2016, with respect to its G.O. 112 Inspection of South and North Lake Tahoe and Truckee, Districts 14, 15 and 16, from August 3 through August 7, 2015.

I. Probable Violations:

1. Title 49 Code of Federal Regulations (CFR) §192.465(a) states:

"Each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of §192.463. However, if tests at those intervals are impractical for separately protected short sections of mains or transmission lines, not in excess of 100 feet (30 meters), or separately protected service lines, these pipelines may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period."

SED reviewed external corrosion control monitoring records for separately protected steel sections including a steel section at 191 Marlette Drive in Tahoe City. Construction records indicated that



the steel section at 191 Marlette Drive in Tahoe City was installed in 1979. SWG failed to provide records and demonstrate it monitored this separately protected steel section in accordance with Title 49 CFR §192.465(a) between 1979 and 2014.

SWG is therefore in violation of Title 49 CFR §192.465 (a). Please advise SED whether the steel section is safe to operate and if further action is necessary. Please provide SED with the measures taken by SWG to prevent this violation from recurring.

Southwest Gas Response:

The service at 191 Marlette Drive in Tahoe City is operating safely. Southwest Gas acknowledges that external corrosion control monitoring was not performed on the isolated steel segment between 1979 and 2014. Southwest Gas' internal review of records related to this service revealed that the installation records and subsequent as-built records did not identify the isolated steel segment. Southwest Gas excavated the service in September 2014 to repair a Grade 3 leak. Upon discovering the isolated steel section, the Company immediately removed it and replaced it with PE. As such, no further action related to external corrosion control monitoring is necessary.

Southwest Gas is also taking measures to investigate other service installations in the area and reduce the likelihood of recurrence. The Company has identified 28 similar service installations that occurred in the same time period and near the same location as the installation at 191 Marlette Drive, and will be performing dig and inspects or camera inspections on each service to confirm the information in its records. Southwest Gas anticipates that it will complete the inspections during the upcoming construction season, but no later than October 1, 2016.

II. Areas of Concern and Recommendations

1. California Public Utilities Commission's General Order No. 58A, Section 7. Purity of Gas states in part:

a. Hydrogen Sulfide

No gas supplied by any gas utility for domestic, commercial or industrial purposes in this state shall contain more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet.

b. Total Sulfur

No gas supplied by any gas utility for domestic, commercial or industrial purposes shall contain more than five (5) grains of total sulfur per one hundred (100) standard cubic feet."

- A. SED reviewed gas quality monitoring data provided by SWG for Paiute Station 4. The data indicated monitoring of total sulfur levels above or below a threshold of 338.4 ppm. General Order No. 58A requires that no gas shall contain more than 5 grains of total sulfur per 100 standard cubic feet (~80 ppm). SED recommends that



SWG lower the monitoring point for total sulfur from 338.4 ppm and monitor sulfur content per the requirement of General Order No. 58A.

Southwest Gas Response:

Southwest Gas accepts SED's recommendation and will reset its monitoring tools to alert when total sulfur exceeds 5 grains of total sulfur per 100 cubic feet.

- B. SED requested SWG to identify the SWG procedure containing the gas quality requirements. SWG provided Corrosion Control Policy Section 3.1.1 Internal Corrosion General (192.475) which states:

"The Company monitors gas quality data including, sulfur, CO2 and water as that data becomes available from its upstream suppliers. If Tariff parameters are exceeded, the Company will contact the suppliers to determine a resolution."

SED recommends that SWG include the requirement to monitor hydrogen sulfide in its procedures and identify the allowable limits for water content, hydrogen sulfide and total sulfur. SED also recommends that SWG document in its procedures the remedial actions it will take if allowable levels for these compounds are exceeded.

Southwest Gas Response:

In addition to Section 3.1.1 of the Corrosion Control Policy, Southwest Gas addresses gas quality requirements and monitoring in the SCADA – Gas Quality Monitoring section of its Operations Manual. A copy of the relevant section is included with this response. The table (Table 8) provided in the SCADA – Gas Quality Monitoring section includes a requirement to monitor hydrogen sulfide, and identifies the allowable limits for water content, hydrogen sulfide and total sulfur.

Consistent with Southwest Gas' response to Recommendation "A" above, the Company will revise Table 8 to reflect an allowable limit of 5 grains of total sulfur per 100 cubic feet. The Company anticipates that this revision will be included in its mid-year manual release.

Southwest Gas appreciates SED's consideration of this matter. Please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,



Enclosures

General Order (G.O.) 112 Inspection of Southwest Gas Corporation, South and North Lake Tahoe and Truckee, Districts 14, 15 and 16

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OPERATIONS MANUAL

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Prepared By: Engineering Staff
 Approved By: Jerry Schmitz
 Issue Date: 12/31/13
 Effective Date: 01/31/14
 Superseded Date: 09/05/13



3. GAS QUALITY MONITORING

3.1.1 Data from chromatographs, moisture analyzers and sulfur analyzers is retrieved through SCADA and used for the purposes shown in the table. In general this data is stored in the long term historian, PI.

3.1.2 Designated data in the table is retrieved from supplier pipeline websites when available. Not all supplier pipelines provide all of the data listed.

Source	Data Description	Data value Tariff or Regulatory limit	Tariff/ Regulatory Compliance	Billing Calculations	Integrity Management	Operations Integrity	Research/ Customer Request
Chromatograph	Gas composition						X
	BTU/cubic foot	Arizona - > 967 California - > 950 Nevada - > 900 Paiute - > 975	X	X	X		
	Specific gravity			X			
	Carbon dioxide	< 2%	X	X	X	Liquefaction	
	Nitrogen	< 3%	X	X			
Supplier Pipeline Website	Gas composition						X
	Wobbe number						X
	Hydrocarbon dew point °F	< 20				Pipeline	
	BTU/cubic foot	Arizona - > 967 California - > 950 Nevada - > 900 Paiute - > 975	X	X	X		
	Specific gravity			X			
	Carbon dioxide	< 2%	X	X	X		
Moisture Analyzer, Supplier Pipeline Website	Water lbs/MMcf	< 7.0	X		X		
	Sulfur Analyzer, Supplier Pipeline Website	Hydrogen sulfide grains/100 cu. ft	< .25	X		X	
Total Sulfur grains/100 cu. ft		< 20	X		X	Odorization	

Table 8

3.1.3 The SCADA data listed above that is not used for billing calculations will not be alarmed as priority 1 or 2 within the SCADA system. Notifications from the SCADA system are optional.

3.1.4 Engineering Staff will monitor the values listed in the table and coordinate the response to values outside tariff/regulatory limits.

Procedure	SCADA – Gas Quality Monitoring	Sec-Pg 3-1
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- 3.1.4.1 In general the response to repeated values outside the tariff/regulatory limits will be to contact the applicable interstate pipeline responsible for the gas quality and verify the values and seek resolution, if applicable.
- 3.1.5 The Gas Control Department will have no responsibility to review or monitor the data listed in the table that is not used for billing calculations, but will respond to communication issues as is required for other non-critical RTUs.