



U.S. Department
of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

**Pipeline and Hazardous
Materials Safety Administration**

August, 13, 2020

Mr. Travis Sera
Director of Integrity Management
Southern California Gas Company
555 W. Fifth Street
Los Angeles, CA 90013

Dear Mr. Sera:

In a letter to the Pipeline and Hazardous Materials Safety Administration (PHMSA), dated May 4, 2020, you requested an interpretation of 49 Code of Federal Regulations (CFR) Part 192. Specifically, you requested an interpretation of § 192.113 as it relates to the longitudinal joint factor (E) for steel used under § 192.105 to determine a natural gas pipeline maximum allowable operating pressure (MAOP).

You stated that San Diego Gas & Electric and Southern California Gas Company are aware of a March 10, 2020, submission to PHMSA by the Public Advocates Office for an interpretation of the Longitudinal Joint Factor for Line 1600. You stated that your request relates to the Line 1600, a 50-mile San Diego Gas & Electric gas transmission pipeline located in San Diego County, California. Finally, you stated that “through this request, SDG&E and SoCalGas seek to confirm that the operator’s possession of company Standard Specifications for Line Pipe and historical work order documents which both state a requirement that 16-inch pipe meet the American Petroleum Institute (API) 5L/5LX Pipe Specification, and thus affirmatively rules out pipe classes with LJFs less than 1.0 because API 5L does not allow furnace butt welds on pipe over 4-inches or any “other” pipe class with an LJF less than 1.0, are sufficient to establish a Longitudinal Joint Factor of 1.0.”

In support of your request, you provided background information and documents. You ask whether a longitudinal joint factor of 1.0 is properly determined based on historical records under § 192.113, if the historical records for the 50-mile 16-inch diameter Line 1600 pipeline meets Specification API 5L or 5LX, when such Specification required a pipe class with a longitudinal joint factor of 1.0.

As stated in our May 7, 2020 letter to the Public Advocates Office, the longitudinal joint factor to be used in the design formula in § 192.105 is determined in accordance with the table listed for § 192.113. Methods for determining the pipe joint factor can be based upon different factors, such as whether the pipe diameter(s), wall thickness(es), yield strength, and manufacturing period are applicable for that seam type. Also, the seam type can be determined based upon inspections (excavations or pipe removals) of the pipe in accordance with the testing parameters

The Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety provides written clarifications of the Regulations (49 CFR Parts 190-199) in the form of interpretation letters. These letters reflect the agency's current application of the regulations to the specific facts presented by the person requesting the clarification. Interpretations are not generally applicable, do not create legally-enforceable rights or obligations, and are provided to help the specific requestor understand how to comply with the regulations.

(spacing for tests and whether destructive or nondestructive) in §§ 192.107, 192.109, 192.619(a)(4), or 192.624 as applicable. Further, the table included in § 192.113 states that if the type of longitudinal joint cannot be determined, the joint factor to be used must not exceed that designated for “Other.” For “Other” pipe over 4 inches (102 millimeters), the longitudinal joint factor E is 0.8.

Your request, although couched in terms of seeking an interpretation on the application of a specific regulation to Line 1600, is more properly viewed as a request for a declaratory judgment from PHMSA to resolve a factual dispute between you and the California Advocates Office as it relates to the longitudinal seam type for Line 1600. The information provided to us by the Advocates Office is that the longitudinal seam type is unknown, which requires a factor E of 0.8. The information provided by you, in contrast, purports to establish that the seam type is known and a factor E of 1.0 is appropriate under the regulation.

PHMSA provides written clarifications of the Federal pipeline safety regulations that reflect the agency's current application of the regulations to the specific facts presented by the person requesting the clarification. Interpretations are not generally applicable, do not create legally-enforceable rights or obligations, and are provided to help the specific requestor understand how to comply with the regulations. In this case, San Diego Gas & Electric and Southern California Gas Company are disputing the California Public Advocates Office's presented information and, therefore, are requesting that PHMSA resolve a factual issue. PHMSA is not in a position to validate one party's assertion of facts over the other. Accordingly, PHMSA suggests that both parties resolve the factual dispute through physical inspection of the pipeline in question, or through other appropriate means.

If we can be of further assistance, please contact Tewabe Asebe at 202-366-5523.

Sincerely,

John A. Gale
Director, Office of Standards
and Rulemaking



A  Sempra Energy utility

Travis Sera
Director - Integrity Management

555 W. Fifth Street
Los Angeles, CA 90013

Tel: 213.244.5072
TSera@socalgas.com

May 4, 2020

John Gale
Director, Standards and Rulemaking
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
East Building, Second Floor
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Request for Regulatory Interpretation, San Diego Gas & Electric and Southern California Gas Company's Line 1600

Dear Mr. Gale:

San Diego Gas & Electric (SDG&E) and Southern California Gas Company (SoCalGas) write to request the Pipeline and Hazardous Materials Safety Administration (PHMSA) interpret Title 49 Code of Federal Regulations (CFR) Part 192.113, which addresses the Longitudinal Joint Factor for steel pipe, a required factor for determining Maximum Allowable Operating Pressure (MAOP) for natural gas pipelines under 49 CFR 192.105. This request relates to Line 1600, a 50-mile SDG&E gas transmission pipeline located in San Diego County, California.

SDG&E and SoCalGas are aware of a March 10, 2020 submission to your office by the Public Advocates Office (CalPA), the consumer advocate of the California Public Utilities Commission (CPUC), requesting an interpretation of the Longitudinal Joint Factor for Line 1600.¹ Though related, this request differs from the CalPA submission in that SDG&E and SoCalGas provide additional information to inform PHMSA's interpretation. Specifically, this submission includes: (a) the historical records underlying SDG&E's, SoCalGas', the CPUC's Safety and Enforcement Division's (SED) and the independent auditor's (RCP, Inc.) conclusions that the correct Longitudinal Joint Factor (LJF) for all segments of Line 1600 is 1.0; (b) direct examination records for certain segments of Line 1600; and (c) in-line inspection (ILI) data for the pipeline.

¹ PHMSA's certified State enforcement agency is the CPUC's Safety and Enforcement Division (SED), not CalPA.

Section 192.113 provides: “The longitudinal joint factor to be used in the design formula in §192.105 is determined in accordance with” the table found in Section 192.113, which includes specific Longitudinal Joint Factors for pipe classes found under Specification “API 5L” (including API 5LX).² For 16-inch pipe, the LJF for such pipe classes is 1.0. Section 192.113 further provides: “If the type of longitudinal joint cannot be determined, the joint factor to be used must not exceed that designated for ‘Other.’” which is 0.80. Here, however, as set forth below, SDG&E and SoCalGas determined that the type of longitudinal joints on Line 1600 are those identified in API Specification 5L, and all of those have an LJF of 1.0

SDG&E, SoCalGas, SED and RCP all determined that the type of longitudinal joint on Line 1600 could be ascribed to one of the pipe classes under Specification API 5L/5LX for which the LJF is 1.0 based upon historical records. Through this request, SDG&E and SoCalGas seek to confirm that the operator’s possession of company Standard Specifications for Line Pipe and historical work order documents which both state a requirement that 16-inch pipe meet the American Petroleum Institute (API) 5L/5LX Pipe Specification, and thus affirmatively rules out pipe classes with LJFs less than 1.0 because API 5L does not allow furnace butt welds on pipe over 4-inches or any “other” pipe class with an LJF less than 1.0, are sufficient to establish a Longitudinal Joint Factor of 1.0.

Per Section 192.113, SDG&E and SoCalGas apply a LJF of 1.0 where the API 5L/5LX pipe manufacturing specification of the installed pipe is known, and the same LJF of 1.0 applies to all possible seam types subject to the manufacturing specification, even where pipe-specific records for certain segments do not identify the specific seam type . With respect to Line 1600, supplemental inspection records (both ILI and direct examination) for this line comport with the documented pipe specification for such segments, and validate the determined LJF for these pipeline segments, particularly confirming the entire pipeline aligns with the API 5L specification. The SDG&E and SoCalGas position aligns with the underlying principles of Subpart O, namely, to strengthen the integrity of transmission pipeline systems using integrated data and a holistic approach.³

SDG&E, SoCalGas, the CPUC’s Safety and Enforcement Division, and an independent auditor retained by the California Public Utilities Commission (RCP, Inc.) reviewed the calculation of the MAOP for Line 1600 and interpreted the established LJF of 1.0 to be consistent with federal regulations.

² 51 Fed. Reg. 15333.

³ “Data integration is an important concept in the IM rule. In principle, this is an action that will help assure that operators learn about their pipelines the things that data from disparate activities can tell them.” - Excerpt from PHMSA Gas Transmission Integrity Management FAQ 240, 08/02/2006, www.phmsa.dot.gov

Background

Line 1600 is a 16-inch diameter natural gas transmission pipeline originally constructed in 1949 with pipe manufactured by A.O. Smith Corporation using the electric flash-welded (EFW) manufacturing method. The original Line 1600 design based MAOP is 812.5 pounds per square gauge (psig). Per 49 CFR §192.105, this MAOP is established based on the 16-inch outside diameter (OD), 0.250-inch wall thickness, 52 ksi grade, a 1.0 Longitudinal Joint Factor, and a 0.5 class location design factor. The original 1949 work orders identify API 5L or API 5LX pipe. Historical records indicate each pipe joint was hydrotested at the mill, and a post-construction pressure test was not conducted. Approximately 46 miles of the original 1949 pipe remain in service today. The long seam type (pipe class) of the 1949 A.O. Smith pipe is known and is not at issue here.

Over time, there has been work on small sections of Line 1600, and there are 29 Work Orders (including the original installation). Twelve of these Work Orders specifically reference the exact long seam type of the installed pipe, while 17 Work Orders do not. The Line 1600 segments for which the historical installation records do not specifically identify the long seam type were installed between 1961 and 2006. During this time period, and through the present, SDG&E had and has Standard Specifications for Line Pipe that required API 5L or API 5LX pipe.⁴ Further, the supporting historical work order records specifically reference installation of 16-inch pipe meeting API 5L or 5LX.

For six of the 17 Work Orders where the exact longitudinal seam type is not expressly set forth in the Work Order, direct examination records affirm the long seam type to be consistent with API 5L/5LX and a 1.0 LJF. These direct examination records, further validated by ILI results, provide an additional layer of confidence that SDG&E's available historical records establish that pipe meeting the API 5L or 5LX specification, with an LJF of 1.0, was installed on Line 1600.

In 2018, to address CalPA's concerns regarding SDG&E and SoCalGas's calculation of the MAOP for Line 1600 using an LJF of 1.0, the CPUC directed SDG&E and SoCalGas to facilitate an audit review of Line 1600 records by an independent third party. The audit was completed in October 2019 by RCP, an independent third-party auditor (Auditor) selected and directed by SED⁵. The Auditor focused on the pipeline segment list and validated the MAOP using the historical documentation for Line 1600. After reviewing over 865 pages of MAOP records, the Auditor concluded the following:⁶

⁴ SDG&E Standard Specifications for Line Pipe July 9, 1956 to present. The January 27, 1964 and December 12, 1964 Standards are provided as supporting documents.

⁵ CPUC Decision 18-06-028, Ordering Paragraph 9, 10, June 21, 2018

⁶ Line 1600 MAOP Audit, Final Report, Dated October 17, 2019 completed by RCP, at 9-10 (emphasis added).

- “The minimum MAOP based on the lowest of the design and pressure calculations for each pipeline segment on Line 1600 is 800 psig which is greater than the current established MAOP.”
- “All historical documents were consistent and sufficient to confirm the pipe specifications used on the original installation of the 16-inch pipe for Line 1600. The company utilized the Kiefner Report in combination with a third-party Inspection Report from Moody Engineering to ensure the manufacturing process of the 16-inch pipe complied with API-5L standards.”
- “There are records for pipe segments that did not have a seam type listed in the pipe specifications. SDG&E performed an internal study on long seam types based on the history of the company’s Pipe Design Standards. *No Lap Weld or Furnace Butt Weld pipe was used in the construction and replacement sections of Line 1600.* Therefore, a longitudinal joint factor of 1.0 can be used when there is no specification of seam type on a document.”

SDG&E and SoCalGas are currently implementing an SED-approved Line 1600 Test and Replace Plan to replace approximately 37 miles of Line 1600 pipe located in high consequence areas and pressure test approximately 13 miles of Line 1600 pipe located in non-high consequence areas.

Supporting Documents

Attached to this letter are the following documents, which support a Longitudinal Joint Factor of 1.0 for Line 1600:

1. *L1600 Supporting Documentation and Data File*, which (a) summarizes the historical records and, where applicable, “dig” records establishing the installed pipe was manufactured to API 5L or API 5LX Pipe Specifications for pipe segments with Work Orders that do not specifically state the long seam type; and (b) attaches those historical and “dig” records by each of the 19 Work Orders.
2. *Line 1600 Longitudinal Joint Factors White Paper* prepared by SDG&E and SoCalGas that provides supporting background information and rationale for the application of an LJF of 1.0 to the pipe installed pursuant to the 19 Work Orders that do not provide an explicit longitudinal seam type. RCP referred to this White Paper in their Audit L1600 spreadsheet and in their audit report.
3. *October 17, 2019, Line 1600 MAOP Audit Final Report of RCP, Inc.*, an independent third-party auditor, which also confirms the determination that a Longitudinal Joint Factor of 1.0 applies to all segments of Line 1600.

4. *Line 1600 In-Line Inspection Data*, which confirms all Line 1600 longitudinal seams are intact, comports to the existing pipeline specifications and records, and demonstrates there are no inconsistencies with regard to longitudinal seams that may suggest the presence of pipe segments with LJF of 0.8 or 0.6. The entirety of Line 1600 has been in-line inspected 2 times between 2012 and 2016 using multiple ILI tool technologies to evaluate for metal loss, deformation and longitudinal seam conditions, including circumferential magnetic flux leakage tools.⁷

Request for PHMSA Interpretation

SDG&E and SoCalGas seek PHMSA's interpretation of the following question based on the information set forth above:

- Under Section 192.113, is a Longitudinal Joint Factor of 1.0 properly determined based upon historical records showing that installed pipe in a 16-inch steel transmission line met Specification API 5L or 5LX, when such Specification required a pipe class with a Longitudinal Joint Factor of 1.0?

We thank you for your consideration. Please contact me if you have additional questions or if you would like to discuss these matters at your earliest opportunity.

Sincerely,



TRAVIS SERA
Director – Integrity Management
SOUTHERN CALIFORNIA GAS COMPANY

⁷ It should be noted that circumferential magnetic flux leakage assessment was only successfully completed once in 2012. The 2016 attempt to complete inspection of Line 1600 with circumferential magnetic flux leakage resulted in a stuck tool and only a partial inspection.