

Line 181B MAOP Review



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Approved by

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Line 181B – MAOP Review

March 5, 2014

1. Issue Description – Gas Transmission Line 181B

On January 28, 2014, as part of a 2014 MAOP Audit, the SED identified a discrepancy on Line 181B between the MAOP of 400 psig provided on the Pipeline Features List (PFL) and the current MAOP of 500 psig. The MAOP of Record was listed as 400 psi from Station 6057.8 to Station 11216.6. Based on the most recent uprate conducted on this section of Line 181B in 1995, the actual MAOP of the line should be 492 psi using a conservative approach. The current MAOP of the pipeline is 500 psi and PG&E has been operating the pipeline in accordance with this MAOP since 1995.

2. Pipeline Description and History

Line 181B is located in San Benito, Monterey, and Santa Cruz counties near Watsonville and Aromas, and is tied to Line 301G. The 10.8-mile long L-181B runs between Anzar Station and Front Street Regulator Station in Watsonville. The 2.2 mile section of pipeline involved with the MAOP issue is between Anzar Station (Mile Point 0) and Cole Road Regulator Station (Mile Point 2.2) in San Benito County.

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The section of pipeline between Mile Point 0 and 2.2 is located in non-HCA Class Location 1 and 2 areas¹. This pipeline was originally installed in 1960.

3. Establishment of MAOPs and Testing

The following table provides a summary of the three tests completed on Line 181B. In addition, other shorter sections of the pipe line have been installed at different dates and tested. We have re-validated all of the pipe specification and testing data on the 2.2 mile section of pipe.

Date of Testing	Type of Testing	Test Pressure	MAOP per test (CL 2) in accordance with applicable regulations	MAOP
1960	Strength Test (GO 112 in 1961)	1240 psi	826 psi	300 psi
1975	Strength Test (Sub Part J in 1975)	684 psi at low point	498 psi	400 psi
1995	Uprate (Sub Part K)	492 psi per chart	492 psi	500 psi originally (re-set to 492 psi)

3.1. Testing

L-181B was strength tested up to 1240 psig when it was installed in 1960. This qualified the pipeline for an MAOP of 826 psig per the GO 112 MAOP qualification requirements implemented in July 1961. The line was operated at an MAOP of 300 psig from 1960 to 1975. The line was operating at less than 20% Specified Minimum Yield Strength (SMYS).

In 1975, PG&E strength tested L-181B under 49 CFR Part 192, Subpart J in order to raise the MAOP from 300 psig to 400 psig. The pressure was tested up to 684 psig, qualifying for an MAOP of up to 498 psig, including adjustments associated with elevation differences.

In 1995, PG&E uprated L-181B pursuant to 49 CFR Part 192, Subpart K to establish an MAOP of 500 psig from the prior MAOP of 400 psig. However, PG&E has determined that the test conducted in 1995 did not take the pressure high enough to establish the full 500 psig MAOP for all of L-181B, as the pressure at Anzar Station reached a level of 492 psig. This established an MAOP of 492 psig for the 2.2 mile section of line described above.

¹ Pipelines are rated Class 1 to Class 4, based on increasing level of population. Class 1 being the lowest population/consequence (10 residences or businesses per mile of pipeline), Class 4 being the higher (Class 4 is an urban area where buildings of four or more stories are prevalent).

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3.2. Pipeline Features and Specifications

Following this discovery, the 181B PFL and related documents were completely re-reviewed and quality checked. Appropriate changes were made as necessary. The revised PFL indicates that the 492 psi section of Line 181B will be operating at less than 30% SMYS at 492 psi.

3.3. Actual Pipeline Pressures

This pipeline normally operates between 480 psi – 490 psi based on a measurement point in Anzar Station upstream of Line 181B and the associated orifice meter. The actual pressure in the pipeline would be less than this pressure. This pressure is not regulated near this location and fluctuates based on the system load. The regulation point is approximately 11 miles away at Hollister Station.

Since August 2012, L-181B has operated at 492 psig or less except for January 1-2, 2013. On these days, the maximum pressure on L-181B reached 494.9 psig.

3.4. Conclusion

PG&E has reviewed test records that established the MAOP of the given segment, including its history of successful strength tests, leak surveys, and pipeline design. As a result of this review, we have concluded that the pipeline can operate safely at 492 psig.

PG&E's is taking a conservative approach to 49 CFR Part 192, and establishing MAOP by using the 1995 uprate test results, rather than the test pressure from a previous subpart J pressure test to establish the MAOP of L-181B. On February 26, 2014, PG&E reduced the MAOP of L-181B to 492 psig, or a reduction of 8 psig. This was accomplished by lowering the overpressure protection set point pressure in L-301G at Hollister Meter Station. PG&E will be updating the PFL for L-181B as well as PG&E's Drawing 086868², "Pipeline - Datasheet, Maximum Allowable Operating Pressure (MAOP) of Lines operating at or Over 20% SMYS" to reflect this change.

² PG&E Drawing 086868, "Pipeline - Datasheet, Maximum Allowable Operating Pressure (MAOP) of Lines operating at or Over 20% SMYS", lists the Maximum Operating Pressure (MOP), MAOP, and Future Design Pressure (FDP) of backbone and local transmission pipelines, Distribution Feeder Mains (DFM), and pipe-type high pressure gas underground holders operating at or over 20% SMYS.