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DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

[Docket No. PHMSA-2006-23387; Notice 2]

Pipeline Safety: Grant of Waiver; Alliance Pipeline L.P.

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA); DOT.

ACTION: Grant of Waiver.

SUMMARY: PHMSA is granting Alliance Pipeline L.P. (APL) a waiver of compliance from certain PHMSA regulations for the United States portion of its pipeline system. This waiver increases the maximum allowable operating pressure (MAOP) for its pipeline. It also increases the design factor for its compressor station piping, grants relief from the hydrostatic testing requirements for its compressor station piping, and grants relief from equipment requirements for pressure relieving and limiting stations.

Before granting the waiver, PHMSA performed a thorough technical review of APL's application for waiver and supporting documents. PHMSA requested and received supplementary information pertaining to numerous technical aspects of APL's design, engineering, operations, and maintenance practices. PHMSA also sought comments from the public and received positive feedback from the impacted States along the pipeline and the Technical Pipeline Safety Standards Committee.

The waiver is subject to and conditional upon supplemental safety criteria set forth in this notice. The supplemental safety criteria address the life cycle management of the subject

pipeline and require the operator to adhere to maintenance, inspection, monitoring, control, and reporting standards exceeding existing regulatory requirements.

SUPPLEMENTARY INFORMATION:

Background

The United States portion of APL's system was commissioned in 2000 and consists of approximately 888 miles of transmission pipeline in North Dakota, Minnesota, Iowa, and Illinois. APL transports natural gas from the Canadian/United States border near Minot, North Dakota to the Aux Sable Delivery Meter Station near Chicago, Illinois where natural gas liquids such as ethane, butane, propane, and other liquids are separated out from the gas stream. The natural gas is then transported about 13 miles to various metering facilities. The APL system includes seven compressor stations.

The APL system is constructed from 36-inch, Grade X70 high pressure steel pipe with three wall thicknesses: 0.622 inches, 0.746 inches, and 0.895 inches. The pipelines are mechanically welded, coated with multi-layered, fusion-bonded, non-shielding epoxy, and are protected by an impressed current cathodic protection system.

During construction of the APL pipeline, all girth welds were subjected to volumetric inspection to verify weld quality. Further, in 2005, APL inspected the pipeline using a high-resolution Magnetic Flux Leakage (MFL) in-line inspection (ILI) tool. The operator used this technology to look for anomalies that could impact the integrity and safety of the pipeline. No anomalies were found.

APL's Waiver Requests

APL requests a waiver of compliance from the following regulatory requirements:

49 CFR § 192.111 — *Design Factor (F) for Steel Pipe;*

49 CFR § 192.201 — *Required Capacity of Pressure Relieving and Limiting Stations;*

49 CFR § 192.505 — *Strength Test Requirements for Steel Pipeline to Operate at a Hoop Stress of 30 percent or more of SMYS; and*

49 CFR § 192.619 — *Maximum Allowable Operating Pressure: Steel or Plastic Pipelines.*

The waiver request is for approximately 874.7 miles of 36-inch diameter pipe located in the United States between the Canadian border at Milepost 0.0 and the inlet of Aux Sable Deliver Meter Station near Chicago, Illinois at Milepost 874.7. In the document, we refer to this segment as the area of waiver.

The waiver application involves six specific requests:

(1) Increase the stress level from 72 percent of SMYS, corresponding to 1740 psig, to 80 percent of SMYS, corresponding to 1935.1 psig from the Canadian border at Milepost 0.0 to the inlet of the Aux Sable Delivery Meter Station near Chicago, Illinois, at mile post 874.7. This segment of the APL pipeline, including the compressor stations, is referred to as the waiver area.

(2) Provide relief from regulations which require that compressor station piping be subjected to Class 3 testing requirements by increasing the stress level in the compressor station piping from 50 percent of SMYS, corresponding to 1814 psig,

to 54 percent of SMYS, corresponding to 1961.4 psig. This request results in increasing the design factor for the station piping from 0.50 to 0.54.

(3) Provide relief from regulations requiring all Class 1 locations to comply with strength test factor requirements. The minimum test pressure obtained in pipelines located in Class 1 locations was 2229 psig. This resulted in a 1.15 test factor for operation at 1935.1 psig (80 percent of SMYS).

(4) Provide relief from regulations requiring all Class 2 locations to comply with strength test factor and the design factor requirements. Two Class 2 locations totaling 966 linear feet (LF) are affected by this request and include a 379 LF section located downstream of mile post 764.6 and a 587 LF section located downstream of mile post 819.8. These two Class 2 locations will increase the design factor to 80 percent of SMYS and operate up to the proposed MAOP of 1935.1 psig.

(5) Allow use of the American Society of Mechanical Engineers (ASME) standard B31.8 requirement to hydrostatically test compressor station piping to 1.4 times the MAOP, in lieu of the regulatory requirements to test to 1.5 times the MAOP. As a result, piping in one of APL's compressor stations will be hydrostatically re-tested; however, the remaining six stations will not require additional station piping hydrostatic tests.

(6) Relief from regulations governing compressor station design MAOP and overpressure protection set points, and be permitted to operate the system at the compressor stations at less than or equal to 1961.4 psig. This corresponds to a compressor station MAOP of 54 percent SMYS (81.07 percent of SMYS of the mainline pipe), which is 26.3 psig above the proposed 1935.1 psig (80 percent of

SMYS operating pressure). The overpressure protection set point exceeds the regulatory requirement of 75 percent of SMYS, but is less than 110 percent of the mainline MAOP of 1935.1 psig.

Pipeline System Analysis

APL established feasibility criteria to assess the safety and reliability of the pipeline to operate at stress levels up to 80 percent of SMYS. These criteria include:

- Developing operational commitments that would improve safety for any person residing, working, or vacationing near the United States portion of its pipeline, including approximately 15 miles of pipeline located in high consequence areas.
- Performing in-depth assessments of its existing pipeline equipment to ensure there is no impact on the reliability of the pipeline. APL performed reviews to verify the equipment is capable of sustaining operations at increased pressures.
- Providing environmental benefits versus other delivery alternatives for the additional gas being provided.
- Creating economic benefits to natural gas suppliers and shippers.
- Creating incremental economic benefits to end use customers.

APL also performed technical reviews and assessments of its pipeline and compressor stations facilities that currently operate at 72 percent of SMYS and in the future will operate at 80 percent of SMYS. APL compared the threats associated with a pipeline operating at 72 percent of SMYS with the threats associated with a pipeline operating at 80 percent of SMYS. APL analyzed the following nine threats: (1) excavation damage;

(2) external corrosion; (3) internal corrosion; (4) stress corrosion cracking; (5) pipe manufacturing; (6) construction; (7) equipment; (8) weather and outside factors; and (9) incorrect operations.

In response to these technical reviews and assessments, APL proposed several programs to mitigate the increased risks to its pipeline. APL will implement preventive measures as part of its Integrity Management Program (IMP) to mitigate the threats imposed by excavation damage. APL also will develop an external corrosion mitigation plan to address the threat of external corrosion, and APL will rely on the integrity reassessment intervals of IMP to mitigate the threat of internal corrosion. To manage the threat of stress corrosion cracking, APL will implement magnetic particle examinations at any location(s) along its pipeline where damage to its fusion bond epoxy (FBE) coating is detected. APL also will perform external corrosion direct assessment (ECDA) in the Class 2 areas prior to increasing pressure with the exception of the pipeline segment located under the Mississippi River where ECDA is impractical.

Grant of Waiver

On March 22, 2006, PHMSA published its notice of intent to consider the waiver and solicited comments from the public (71 FR 14572). We received two comments: one concerning "open" communications, and the other supporting the waiver.

- One commenter indicated that although APL has proven to be a good neighbor, he expressed reservations about APL's openness in communications.
- The other commenter supported the waiver because the benefits of granting the waiver will at least include (1) an increase in available natural gas pipeline capacity on APL's pipeline, thereby increasing the amount of natural gas that can

> be delivered to customer markets throughout the United States; (2) an improvement in fuel efficiency through a reduction in required fuel gas, which will lead to fuel cost savings; and (3) a reduction in capital expenditures by APL, particularly for expanding its facilities and building new pipelines.

PHMSA reviewed the documentation submitted by APL prior to proposing action on the waiver petition. PHMSA also requested additional information as a part of its technical review. APL responded to information requests from PHMSA and other stakeholders to clarify technical details of the petition. APL's responses to our supplementary questions are available in docket PHMSA-2006-23387 at http://dms.dot.gov.

PHMSA evaluated APL's studies that technically justified the waiver petition. PHMSA also recognized the superior materials used to construct the APL system and the full-scale testing sponsored by APL to verify the fracture control characteristics of the pipe material. APL proposed operational commitments, when combined with the PHMSA required safety criteria discussed later in this document, enhance the safety of the pipeline system and offset the risk of increasing the operating stress level from 72 percent to 80 percent of SMYS. APL's commitments and PHMSA's supplementary safety criteria require the APL system to be more rigorously monitored than other pipelines not covered by a similar waiver.

PHMSA considered APL's waiver request and whether its proposal will yield an equivalent or greater degree of safety than that currently provided by the pipeline safety regulations. PHMSA also reviewed additional information provided by APL in response

to a PHMSA information request. After reviewing all submitted information, PHMSA also developed safety criteria that APL must comply with as a condition of the waiver. The criteria, listed below, together with the programs proposed by APL in the waiver petition, would be the basis for the life-cycle management of the APL pipeline subject to the waiver.

PHMSA received positive comments and conducted a thorough technical review of APL's application for waiver, supporting documents, and comments received. In addition, PHMSA sought comments and received positive feedback from the impacted States along the pipeline and the Technical Pipeline Safety Standards Committee. PHMSA hereby grants APL's waiver request provided APL, or a successor operator, complies with the following supplemental safety criteria:

Pipe and Material Quality

1. Fracture Control Plan: APL must implement an overall fracture control plan to address fracture initiation, propagation and Charpy arrest (stop) values. The fracture initiation, propagation and arrest plan must account for the entire range of temperatures, pressures and gas compositions that the pipeline will experience.

2. Fittings: All pressure rated fittings and components (including flanges, valves, gaskets, pressure vessels and compressors) must be rated for a pressure commensurate with the MAOP and class location of the pipeline. Designed fittings (including tees, elbows, and caps) must have the same design factors as the adjacent pipe.

3. Station Design Factor: APL may use a design factor not exceeding 0.54 for existing compressor and meter stations. New compressor and meter stations must be designed using a design factor of 0.50 per § 192.111.

4. Temperature Control: The compressor station discharge temperature must be limited to 120° Fahrenheit or a temperature below the maximum long-term operating temperature for the pipe coating.

5. Overpressure Protection: Mainline pipeline overpressure protection must be limited to a maximum of 104 percent of MAOP.

Supervisory Control and Data Acquisition (SCADA)

6. SCADA System: APL must use a SCADA system to provide remote monitoring and control of the entire pipeline system.

7. Mainline Valve Control: Mainline valves that reside on either side of pipeline segment containing a High Consequence Area (HCA) where personnel response time to the valve exceeds one (1) hour must be remotely controlled by the SCADA system. The SCADA system must be capable of opening and closing the valve and monitoring the valve position, upstream pressure and downstream pressure. As an alternative to remote control of mainline valves, APL may implement a leak detection system.

8. SCADA Set Point Review: APL must implement a detailed procedure to establish and maintain accurate SCADA set points to ensure the pipeline is operating within acceptable design limits at all times.

Operations and Maintenance

9. Leak Reporting: APL must notify the PHMSA Central Region Office as soon as practicable of any non-reportable leaks occurring on the pipeline covered by the waiver.

10. Annual Reporting: Annually, following approval of the waiver, APL must report the following:

    - The results of any ILI or direct assessments performed within the waiver area during the previous year.
    - Any new integrity threats identified within the waiver area during the previous year.
    - Any encroachment in the waiver area, including the number of new residences or public gathering areas.
    - Any reportable incidents within the waiver area that occurred during the previous year.
    - Any leaks on the pipeline in the waiver area that occurred during the previous year.
    - A list of all repairs on the pipeline in the waiver area made during the previous year.

- On-going damage prevention initiatives on the pipeline in the waiver area and a discussion of their success.
- Any company mergers, acquisitions, transfers of assets, or other events affecting the regulatory responsibility of the company operating the pipeline to which this waiver applies.

11. Pipeline Inspection: The pipeline must be capable of passing ILI. All headers and other segments covered under the waiver that do not allow the passage of an internal inspection device must have a corrosion mitigation plan.

12. Gas Quality Monitoring and Control: APL's gas quality monitoring and mitigation program must have the ability to restrict constituents that promote internal corrosion to not exceed the following limits:
    - H_2S (4 grains maximum);
    - CO_2 (3 percent maximum);
    - H_2O (less than or equal to 7 pounds per million standard cubic feet and no free water); and
    - Other deleterious constituents that may impact the integrity of the pipeline must be minimized.

13. Gas Quality Control Equipment: Filters/separators must be installed at locations where needed to comply with the above gas quality requirements and meet APL's gas tariff.

14. Control of Liquids: Gas quality monitoring equipment must be installed to permit the operator to manage the introduction of contaminants and free liquids into the pipeline.

15. Corrosion Mitigation Plan: APL must submit an external corrosion mitigation plan as summarized in its waiver petition, Appendix N.

16. Initial Close Interval Survey: An initial base line close interval survey (CIS) must be completed in concert with the baseline ILI indicated in criteria 24 and as indicated in the operational commitments of APL's waiver petition.

17. Verification of Cathodic Protection: A CIS must be performed in concert with an ILI in accordance with subpart O reassessment intervals for all HCA pipeline mileage. If any annual test point readings fall below subpart I requirements, remediation must be performed and must include a CIS on either side of the affected test point.

18. Pipeline Markers: APL must employ line-of-sight marking on the pipeline in the waiver area except in agricultural areas subject to the Federal Energy Regulatory Commission permits or environmental permits and local restrictions.

19. Pipeline Patrolling: APL must patrol the pipeline at least monthly to inspect for excavation activities, ground movement, wash-outs, leakage, and/or other activities and conditions affecting the safe operation of the pipeline.

20. Monitoring of Ground Movement: An effective monitoring/mitigation plan must be in place to monitor for and mitigate issues of unstable soil and ground movement.

21. Uprating Plan Review and Approval: The uprating (commissioning) plan must be submitted to the PHMSA Central Region Office for review and approval before increasing the pressure on the pipeline.

22. Preliminary Criteria Reporting: A preliminary report describing the results, completion dates and status of actions required under supplemental safety criteria contained herein must be completed and submitted to PHMSA Headquarters and PHMSA Central Region Office prior to increasing the pressure on the pipeline system.

23. Criteria Completion Reporting: A report describing results, completion dates and status of the outstanding criteria must be submitted to PHMSA Headquarters and PHMSA Central Region Office within 180 days after completion of uprating.

    A final report must be submitted to PHMSA Headquarters and PHMSA Central Regional Office upon completion of the second ILI run for the pipeline.

Integrity Management

24. Initial ILI: A baseline ILI must be performed in association with this waiver on the pipeline using a high-resolution inline inspection technology capable of

detecting metal loss and mechanical damage. The results of the baseline ILI must be integrated with the baseline CIS as described in criteria number 16.

25. Future ILI: A second high resolution MFL inspection must be performed on the pipe subject to the waiver following the baseline ILI and be completed within the first reassessment interval required by subpart O, regardless of HCA classification. Future ILI must be performed on a frequency consistent with subpart O for the entire pipeline covered by this waiver.

26. Direct Assessment Plan: Headers, mainline valve bypasses, and other sections covered by this waiver that cannot accommodate ILI tools must be part of a Direct Assessment plan or other acceptable integrity monitoring method.

27. Damage Prevention Program: Common Ground Alliance's damage prevention best practices must be incorporated into APL's damage prevention program.

28. Anomaly Evaluation and Repair: Anomaly evaluations and repairs must be performed based upon the following:
    - For purposes of this criterion, the Failure Pressure Ratio (FPR) is an indication of the pipeline's remaining strength from an anomaly and is equal to the predicted failure pressure divided by the MAOP.
    - <u>Anomaly Response Time</u>
        - Any anomaly with a FPR equal to or less than 1.1 must be treated as an "immediate repair" per subpart O.

- Any anomaly with a FPR equal to or less than 1.25 must be remediated within 12 months per subpart O.
- Any anomaly with an FPR greater than 1.25 must have a remediation schedule per subpart O.

- Anomaly Repair Criteria
  - Segments operating at MAOP equal to 80 percent stress level - Any anomaly evaluated and found to have an FPR equal to or less than 1.25 must be repaired.
  - Segments operating at MAOP equal to 66 percent stress level - Any anomaly evaluated and found to have an FPR equal to or less than 1.50 must be repaired.
  - Segments operating at MAOP equal to 56 percent stress level - Any anomaly evaluated and found to have an FPR equal to or less than 1.80 must be repaired.

a. All other pipe segments with anomalies that are not repaired must be reassessed according to subpart O and ASME Standard B31.8S requirements. Each anomaly not repaired must have a corrosion growth rate and an ILI tolerance assigned to it per the Gas IMP to determine the maximum re-inspection interval.

b. APL must confirm that the remaining strength (R-STRENG) effective area method, R-STRENG - 0.85dL, and B31G assessment methods are valid for the pipe diameter, wall thickness, grade, operating pressure, operating stress level, and operating temperature covered under this waiver. If the assessment methods are not valid, APL must submit a valid method to

PHMSA Central Region Office. Until confirmation of the previously mentioned anomaly assessment calculations have been performed, APL must use the most conservative of the calculations for anomaly evaluation.

c. Dents must be evaluated and repaired in accordance with §§ 192.309(b)(ii) and 192.933(d)(l)(ii).

29. Potential Impact Radius Calculation Updates: If the pipeline operating pressures and gas quality are determined to be outside the parameters of the C-FER Study, a new study with the updated parameters must be incorporated into the IMP.

If at anytime PHMSA determines the effect of the waiver is inconsistent with pipeline safety, PHMSA will revoke the waiver at its sole discretion.

AUTHORITY: 49 U.S.C. 60118 (c) and 49 CFR § 1.53.

Issued in Washington, DC on _____.

Theodore L. Willke,

Deputy Associate Administrator for Pipeline Safety.