USDOT PHMSA Update

2017 API – AGA Joint Committee
Oil & Gas Pipeline Welding Practices

Kenneth Y. Lee
Engineering & Research Division
Office of Pipeline Safety

202-366-2694
kenneth.lee@dot.gov
Alan Mayberry is the Associate Administrator for Policy and Programs at the Office of Pipeline Safety in Washington, DC. In his role, Alan leads PHMSA’s development of comprehensive oversight programs including regulatory development, engineering and research, state grants, federal enforcement and the Training and Qualifications Division. Prior to August, 2013, Alan was the Deputy Associate Administrator for Field operations overseeing US pipeline safety oversight through PHMSA’s five regional offices.
PHMSA Pipeline Safety R&D Forum

• Cleveland, OH on Nov 16-17, 2016
• > 300 attendees (industry, government, researchers)
• 5 Working Groups to discuss the top research needs in:
  - Damage Prevention
  - Leak Detection
  - Anomaly Detection
  - Underground Storage
  - LNG Facilities

http://primis.phmsa.dot.gov/rd/mtg_111616.htm
To amend title 49, United States Code, to provide enhanced safety in pipeline transportation, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016” or the “PIPES Act of 2016”.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Authorization of appropriations.
Sec. 3. Regulatory updates.
Sec. 4. Natural gas integrity management review.
Sec. 5. Hazardous liquid integrity management review.
Sec. 6. Technical safety standards committees.
Sec. 7. Inspection report information.
Sec. 8. Improving damage prevention technology.
Sec. 9. Workforce management.
Sec. 10. Information-sharing system.
Sec. 11. Nationwide integrated pipeline safety regulatory database.
Sec. 12. Underground gas storage facilities.
Sec. 13. Joint inspection and oversight.
Sec. 15. Hazardous materials identification numbers.
Sec. 16. Emergency order authority.
Sec. 17. State grant funds.
Sec. 18. Response plans.
Sec. 19. Unusually sensitive areas.
Sec. 20. Pipeline safety technical assistance grants.
Sec. 21. Study of materials and corrosion prevention in pipeline transportation.
Sec. 22. Research and development.
Sec. 23. Active and abandoned pipelines.
Sec. 24. State pipeline safety agreements.
Sec. 25. Requirements for certain hazardous liquid pipeline facilities.
Sec. 26. Study on propane gas pipeline facilities.
Sec. 27. Standards for certain liquefied natural gas pipeline facilities.
Sec. 28. Pipeline odorization study.
Sec. 29. Report on natural gas leak reporting.
Sec. 30. Review of State policies relating to natural gas leaks.
Sec. 31. Also Canyon natural gas leak task force.
Underground Natural Gas Storage

- Interim Final Rule (IFR) issued on Dec. 19, 2016
- 1st federal safety regulations for underground natural gas storage facilities to address critical safety issues
- Mandated by PIPES Act of 2016: Section 12
- Incorporates 2 API Recommended Practices (RP):
Pipeline Safety Voluntary Information-Sharing System (VIS) Working Group

- Mandated by PIPES Act of 2016: Section 10
- Advisory committee to develop recommendations to establish voluntary information-sharing system to exchange and protect pipeline safety and inspection-related data.
- 24 members from gov’t, industry, & public
- First meeting held on Dec. 19, 2016
Excess Flow Valve Rule

• Mandates installation of excess flow valves (EFV) on new and replaced service lines to multifamily residential and small commercial customers.

• The rule takes effect April 14, 2017
PHMSA Completes Rulemaking that Boosts Safety Requirements to Strengthen the Operation, Maintenance, and Inspection of the Nation’s Hazardous Liquid Pipelines

WASHINGTON - Administrator Marie Therese Domínguez, head of the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) announced today that she signed a long awaited rulemaking package that makes critical safety improvements for hazardous liquid pipelines. Today’s signing of the final rule for the safety of on-shore hazardous liquid pipelines completes one of the agency’s top priority rulemakings for 2018.

“As the use of hazardous liquid pipelines to transport the nation’s energy supply grows, communities around the country have demanded regulatory certainty around the safe operation of these lines and facilities,” said U.S. Transportation Secretary Anthony Foxx. “This rule gives operators clear direction on the design, construction, and operation of hazardous liquid pipelines lines and holds them accountable for the safety of the communities they serve- its full implementation will be a vital step in driving our pipeline safety mission.”

The nation contains close to 200,000 miles of hazardous liquid pipelines operating near local communities and treasured landscapes, and crossing major bodies of water, including rivers. The rule signed today strengthens the standards that determine how operators repair aging and high-risk infrastructure, increases the quality and frequency of tests that assess the condition of pipelines, and extends leak detection the requirements to all hazardous liquid pipelines.
Many Rulemakings Still Currently in Process, including:

• Standards Update: Adoption of API 1104, 21st edition

• In Service Welding: Notice of Proposed Rulemaking (NPRM) issued July 10, 2015 to reference API 1104 Annex B
review of the records under the Freedom of Information Act.

In accordance with Departmental FOLA regulations, if a request is received for information that has been designated by the submitter as confidential, we would notify the submitter and provide an opportunity to the submitter to submit any written objections. Whenever a decision is made to disclose such information over the objections of a submitter, we would notify the submitter in writing at least five days before the date the information is publicly disclosed.

XI. In Service Welding

In 1987, the U.S. Department of Transportation, Office of Pipeline Safety issued Alert Notice ALN-87-01 which advised pipeline owners and operators of a pipeline incident involving the welding of a full encirclement repair sleeve on a 14" API 5L X52 pipeline near King of Prussia, PA. The pipeline failure released thousands of barrels of gasoline and was directly related to cracks developed in a fillet weld of a Type B full encirclement repair sleeve. The metallurgical analysis conducted by Battelle Laboratories concluded hydrogen and stress caused cracking of the excessively hard heat affected material in the carrier pipe.

Contributing factors included poor weldability of the carrier pipe due to its high carbon equivalent, a very high cooling rate of the weld due to liquid product being present inside the pipeline during welding, the presence of hydrogen in the welding environment due to the use of cellulosic coated electrodes, residual stresses, and high restraint inherent in the geometry of the sleeve weldment. The alert notice

concerns of welding to an in-service pipeline. Welding procedures developed to API 1104 Appendix B consider the risks associated with hydrogen in the weld metal, type of welding electrode, sleeve/fitting and carrier pipe materials, accelerated cooling, and stresses across the fillet welds. At the present time, typical industry developed in-service welding procedures utilize all or some combinations of low hydrogen electrodes, preheat, temper bead deposition sequence, heat input control, cooling rate analysis, analysis based on pipe/sleeve/fitting material carbon equivalence, and address wall thickness/burn-through concerns. The Office of Pipeline Safety alert notice encouraged the development and use of welding procedures that address improvements in pipeline safety and many operators have developed in-service welding procedures.

Unfortunately, parts 192 and 195 were not modified to include the addition of API 1104 Appendix B as an acceptable section for the development of welding procedures and welder qualification. At the present time, parts 192 and 195 only adopt into Federal Regulation Sections 5, 6, 9 and Appendix A. This proposed rule seeks to rectify this oversight and state the acceptability of developing procedures and qualifying welders to Appendix B of API 1104. Currently, PHMSA does not allow in service welding, but this proposal would allow the operators to follow Appendix B of API 1104 for in service welding. Therefore, PHMSA proposes to revise 49 CFR 192.225, 192.227, 195.214, and 195.222 to add reference to API 1104, Appendix B.

Summary of Correction to § 195.64(a) and § 195.64(c)(1)(ii)

PHMSA published a final rule on November 26, 2010; 75 FR 72878, which established the National Registry of Pipeline and LNG Operators. In the rule, PHMSA inadvertently omitted the inclusion of carbon dioxide in the operating commodity types. To maintain consistency with the rest of part 195, this proposed rule would amend the language in §§ 195.64(a) and 195.64(c)(1)(ii) to correct the term “hazardous liquid” to read “hazardous liquid or carbon dioxide.”

In § 195.248, the conversion to 100 feet is mistakenly stated as 30 millimeters. Therefore, PHMSA proposes to replace the phrase “100 feet (30 millimeters)” to correctly read “100 feet (30.5 meters).”

In addition, low stress pipelines are not specified in § 195.452. Section 195.452 applies to each hazardous liquid pipeline and carbon dioxide pipeline that could affect a high consequence area, including any pipeline located in a high consequence area unless the operator effectively demonstrates by risk assessment that the pipeline could not affect the area. Therefore, PHMSA proposes to add a new paragraph (a)(4) to clarify the applicability of § 195.452 to low stress pipelines as described in § 195.12.

XIII. Availability of Standards Incorporated by Reference

PHMSA currently incorporates by reference into 49 CFR parts 192, 193, and 195 all or parts of more than 60 standards and specifications developed and published by standard developing organizations. PHMSA proposes to add new paragraph (a)(5) to clarify the applicability of those standards and specifications in the final rule.
14. In § 192.225, paragraph (a) is revised to read as follows:

§ 192.225 Welding procedures.

(a) Welding must be performed by a qualified welder or welding operator in accordance with welding procedures qualified under section 5, section 12, Appendix A or Appendix B of API Std 1104 (incorporated by reference, see § 192.7) or section IX of the ASME Boiler and Pressure Vessel Code (ASME BPVC) (incorporated by reference, see § 192.7) to produce welds meeting the requirements of this subpart. The quality of the test welds used to qualify welding procedures must be determined by destructive testing in accordance with the applicable welding standard(s).

15. In § 192.227, paragraph (a) is revised to read as follows:

§ 192.227 Qualification of welders.

(a) Except as provided in paragraph (b) of this section, each welder or welding operator must be qualified in accordance with section 5, section 12, Appendix A or Appendix B of API Std 1104 (incorporated by reference, see § 192.7) or section IX of the ASME Boiler and Pressure Vessel Code (ASME BPVC) (incorporated by reference, see § 192.7). However, a welder or welding operator qualified under an earlier edition than the listed in § 192.7 of this part may weld but may not requalify under that earlier edition.

17. Section 192.740 is added to read as follows:

§ 192.740 Pressure regulating, limiting, and overpressure protection—Individual service lines originating on production, gathering, or transmission pipelines.

(a) This section applies, except as provided in paragraph (c) of this section, to any service line that originates from a production, gathering, or transmission pipeline that is not operated as part of a distribution system.

(b) Each pressure regulating/limiting device, relief device, automatic shutoff device, and associated equipment must be inspected and tested at least once every 3 calendar years, not exceeding 39 months, to determine that it is:

(1) In good mechanical condition;

(2) Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed;

(3) Set to control or relieve at the correct pressure consistent with the pressure limits of § 192.107; and to limit
Thank You!