

NEPSR Eastern Region Seminar

PHMSA Consideration of
NFPA 58 & 59

Committee Members

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NFPA 58 & 59 in the Pipeline Regulation

NFPA 58 “Liquefied Petroleum Gas Code”

Governs the use of LPG, including non-pipeline uses

NFPA 59 “Utility LP-Gas Plant Code”

Governs utility gas plants using LPG for peak shaving

Both are adopted by PHMSA pipeline safety regulations

192.11 requires LPG plants/ pipeline

systems to follow both 192 and relevant standard

Consideration of 2008 Code Versions

The latest versions were not adopted in 2010 regulation update rule; 2004 versions retained

July 22, 2009, proposed rule provided reasons:

- NFPA 58-2008 has lesser requirements for odorization; distribution valve maintenance; operation and maintenance, emergency, and public awareness planning

- NFPA 58-2008 not applicable retroactively (Chapter 14)

- NFPA 59-2008 not consistent with scope of pipeline facilities subject to regulation (192.1(b)(5)) and corrosion control requirements (10 or more)

Primacy in Event of Conflict

192.11(c) specifies that NFPA 58 and 59 prevail in event of conflict with 192

This would result in “lesser” requirements taking precedence over 192

Primacy of standards is unusual; regulations usually prevail

PHMSA has proposed revising 192.11(c) to provide that requirements of 192 should prevail

Current Status

PHMSA withdrew proposed change to
192.11(c) – primacy

Working with NFPA, AGA and NPGA to
identify and address “lesser”
requirements in the standards

PHMSA is considering options for dealing
with primacy issue

PHMSA asked both committees to review their respective documents and submit what they would identify as a conflict between the standard and the regulation.

Then meetings were scheduled:

NFPA 59 & American Gas Association

February 2011

NFPA 58 & National Propane Gas

Association

July 2011

PHMSA did a comparison of 192 to the 2011 NFPA 58 and the 2012 NFPA 59 to identify differences between them.

They took 192 section by section and identified sections out of 58 & 59 that addressed that same requirement. Then they identified whether the standards were lesser, equal or more stringent than the regulation and noted the differences.

Part 192	NFPA 58	NFPA 59
Subpart A - General		
<p>§ 192.5 Class locations. (a) This section classifies pipeline locations for purposes of this part. The following criteria apply to classifications under this section. (Details omitted)</p>	No corresponding requirement	No corresponding requirement

PHMSA held a meeting February 27, 2011 with AGA and representatives from the NFPA 59 committee and discussed the differences between Part 192 and the 2008 edition of NFPA 59 that they had identified. They discussed that it may be more appropriate to use the 2012 edition because of changes that had been made. It was decided to wait until the 2012 edition of NFPA 59 was available so that the changes could be considered.

The 2012 edition of NFPA 59 was available in September, and the changes were included in a updated comparison of 192 to NFPA 59

Major changes to NFPA 59 are:

- Flexibility in piping systems

- Construction and Modification records

- Qualification of Personnel

 - Maintenance or Operation of equipment

 - Monitoring Corrosion Control

- Corrosion control requirements for buried containers and piping including monitoring

Example

192 has retroactive subparts A General, I Corrosion Requirements, K Uprating, L Operations, M Maintenance, O Transmission Integrity, P Gas Distribution Integrity. NFPA 58 is not retroactive unless stated, NFPA 59 in the 2012 edition added 1.3.4

Part 192	NFPA 58	NFPA 59
<p>§ 192.13 What general requirements apply to pipelines regulated under this part?</p> <p>(a) No person may operate a segment of pipeline listed in the first column that is readied for service after the date in the second column, unless:</p> <p>(1) The pipeline has been designed, installed, constructed, initially inspected, and initially tested in accordance with this part; or</p> <p>(2) The pipeline qualifies for use under this part according to the requirements in §192.14.</p> <p>(b) No person may operate a segment of pipeline listed in the first column that is replaced, relocated, or otherwise changed after the date in the second column, unless the replacement, relocation or change has been made according to the requirements in this part.</p>	<p>1.4.2 Unless otherwise specified, the provisions of this code shall not apply to facilities, equipment, appliances, structures, or installations that existed or were approved for construction or installation prior to the effective date of the code. Equipment and appliances include stocks in manufacturers' storage, distribution warehouses, and dealers' storage and showrooms in compliance with the provisions of this code in effect at the time of manufacture. Where specified, the provisions of this code shall be retroactive.</p>	<p>1.3 Retroactivity.</p> <p>1.3.1 Unless otherwise specified, the provisions of this code shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the code. Where specified, the provisions of this code shall be retroactive.</p> <p>1.3.2 In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of this code deemed appropriate.</p> <p><u>1.3.4 The provision of Chapter 11, Operations, and Chapter 12, Maintenance, shall be applied to all facilities retroactively.</u></p>

Example

192 & NFPA 58 are similar with pipe standards where as NFPA 59 just says steel

Part 192	NFPA 58	NFPA 59
<p>§ 192.55 Steel pipe. (a) New steel pipe is qualified for use under this part if: (1) It was manufactured in accordance with a listed specification; (2) It meets the requirements of— (i) Section II of appendix B to this part; or (ii) If it was manufactured before November 12, 1970, either section II or III of appendix B to this part; or (3) It is used in accordance with paragraph (c) or (d) of this section.</p>	<p>5.9.3.1 Pipe shall be wrought iron or steel (black or galvanized), brass, copper, polyamide, or polyethylene and shall comply with the following: (1) Wrought iron: ASME B36.10M, <i>Welded and Seamless Wrought Steel Pipe</i> (2) Steel pipe: ASTM A 53, <i>Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless</i> (3) Steel pipe: ASTM A 106, <i>Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service</i> (4) Brass pipe: ASTM B 43, <i>Standard Specification for Seamless Red Brass Pipe, Standard Sizes</i> (5) Copper pipe: ASTM B 42, <i>Standard Specification for Seamless Copper Pipe, Standard Sizes</i></p>	<p>7.1.1.3 Pressure-containing metal parts of equipment for application temperatures of –20°F (–29°C) or above shall be fabricated of one of the following materials: (1) Steel (2) Ductile (nodular) iron in accordance with ASTM A 395, <i>Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures</i>, or malleable iron in accordance with ASTM A 536, <i>Specifications for Ductile Iron Castings, Grade 60-40-18 or 65-45-12</i> (3) Malleable iron in accordance with ASTM A 47, <i>Standard Specification for Ferritic Malleable Iron Castings</i>; brass; bronze; or equivalent copper alloys</p>

Example

192 limits copper to 100 psi In NFPA 58 this would be a problem because copper is used at over 100 psi to connect tanks and NFPA 59 does not allow copper

Part 192	NFPA 58	NFPA 59
<p>§ 192.125 Design of copper pipe.</p> <p>(a) Copper pipe used in mains must have a minimum wall thickness of 0.065 inches (1.65 millimeters) and must be hard drawn.</p> <p>(b) Copper pipe used in service lines must have wall thickness not less than that indicated in the following table: (Table omitted)</p> <p>(c) Copper pipe used in mains and service lines may not be used at pressures in excess of 100 p.s.i. (689 kPa) gage.</p>	<p>5.9.3 Pipe and Tubing.</p> <p>5.9.3.1 Pipe shall be wrought iron or steel (black or galvanized), brass, copper, polyamide, or polyethylene and shall comply with the following: * * *</p> <p>(5) Copper pipe: ASTM B 42, <i>Standard Specification for Seamless Copper Pipe, Standard Sizes</i> (New/revised in 2008) * * *</p> <p>5.9.3.2 Tubing shall be steel, stainless steel, brass, copper, polyamide, or polyethylene (see 6.9.4) and shall comply with the following: * * *</p> <p>(3) Copper tubing:</p> <p>(a) Type K or L: ASTM B 88, <i>Standard</i></p>	<p>Copper pipe not allowed.</p>

PHMSA held a meeting July 19, 2011 with NPGA , NFPA 58 and other individuals from the propane industry to discuss differences between Part 192 and the 2011 edition of NFPA 58

Some differences identified:

Referenced publications ASTM D2513

ASTM B31.3

Odorization testing

Corrosion control requirements

Operation & Maintenance

Operator Qualification

Public Awareness

PHMSA had a meeting October 12-13, 2011 with the task group and reviewed the comments from industry. The goal was to resolve identified conflicts by stating whether the standard or the regulation assured a higher level of public safety.

Example

192 allows the use of cast iron pipe, NFPA 58 & NFPA 59 both do not allow cast iron pipe

Part 192	NFPA 58	NFPA 59
<p>§ 192.275 Cast iron pipe. (a) Each caulked bell and spigot joint in cast iron pipe must be sealed with mechanical leak clamps. (b) Each mechanical joint in cast iron pipe must have a gasket made of a resilient material as the sealing medium. Each gasket must be suitably confined and retained under compression by a separate gland or follower ring. (c) Cast iron pipe may not be joined by threaded joints. (d) Cast iron pipe may not be joined by brazing</p>	<p>Cast iron pipe is not allowed</p>	<p>Cast iron pipe is not allowed</p>

Example

192, NFPA 58 & 59 all have similar requirements for odorization levels but 192 requires testing with an instrument to determine the percentage of gas in air.

Part 192	NFPA 58	NFPA 59
<p>§ 192.625 Odorization of gas.</p> <p>(a) A combustible gas in a distribution line must contain a natural odorant or be odorized so that at a concentration in air of one-fifth of the lower explosive limit, the gas is readily detectable by a person with a normal sense of smell.</p> <p>(f) To assure the proper concentration of odorant in accordance with this section, each operator must conduct periodic sampling of combustible gases using an instrument capable of determining the percentage of gas in air at which the odor becomes readily detectable.</p>	<p>4.2 LP-Gas Odorization.</p> <p>4.2.1* All LP-Gases shall be odorized prior to delivery to a bulk plant by the addition of a warning agent of such character that the gases are detectable, by a distinct odor, to a concentration in air of not over one-fifth the lower limit of flammability.</p>	<p>4.2* Odorizing Gases. All LP-Gases shall be odorized by the addition of a warning agent of such character that they are detectable by a distinct odor down to a concentration in air of not over one-fifth the lower limit of flammability.</p>

Example

192 requires periodic leakage surveys on distribution systems. NFPA 58 & 59 do not have this survey requirement. NFPA 59 does not cover distribution systems so this requirement would only apply to NFPA 58

Part 192	NFPA 58	NFPA 59
<p>§ 192.723 Distribution systems: Leakage surveys. (a) Each operator of a distribution system shall conduct periodic leakage surveys in accordance with this section. (b) The type and scope of the leakage control program must be determined by the nature of the operations and the local conditions, but it must meet the following minimum requirements:</p>	No corresponding requirement	No corresponding requirement

Conclusion

PHMSA in the spring of 2012 will put out a Notice of Proposed Rule Making to adopt more current standards of NFPA 58 & 59

PHMSA plans to propose a new subpart that would address **Requirements Applicable to Pipelines Transporting Petroleum Gas**

1. Applicability of standards for different types of systems
identify which systems are covered by a standard
2. Identify unique scope for standards and 192 – avoid conflict by avoiding dual requirements