BEFORE THE
UNITED STATES DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
WASHINGTON, D.C.

PETITION FOR RULEMAKING: 49 CFR Part 193.2619

FILED BY
THE AMERICAN GAS ASSOCIATION
THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

May 10, 2018

The American Gas Association (AGA) and the Interstate Natural Gas Association of America (INGAA) respectfully submit this petition for rulemaking to the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to the petition process as set forth in 49 CFR Part 190, Subpart "C" Procedures for Adoption of Rules, Chapter 190.331 Petitions for Rulemaking.

Founded in 1918, AGA represents more than 200 state regulated or municipal natural gas distribution companies. AGA members serve 95 percent of the 72 million natural gas customers, representing more than 160 million people in the United States who daily rely on natural gas service as a basic life necessity or use natural gas for business purposes. AGA and its members are deeply committed towards improving the safety performance of the natural gas industry. Numerous AGA programs and activities focus on the safe and efficient delivery of natural gas to customers. Safety continues to be the leading priority for AGA members.

INGAA is a trade association that advocates regulatory and legislative positions of importance to the interstate natural gas pipeline industry. INGAA is comprised of 27 members, representing the vast majority of the U.S. interstate natural gas transmission pipeline companies. INGAA's members operate nearly 200,000 miles of pipelines and serve as an indispensable link between natural gas producers and consumers.

AGA and INGAA ("the Associations") are advocates for safety and fully engage in the regulatory rulemaking and consensus standards development process to help ensure the safety of our member company employees, their facilities and the public surrounding those facilities. The Associations commend PHMSA's efforts to enhance the safety of pipelines, pipeline facilities, and Liquefied Natural Gas (LNG) and propane-air gas peak shaving facilities.

AGA and INGAA are petitioning PHMSA to amend 49 CFR Part 193.2619 to recognize and enforce the pressure relief device (PRD) testing requirements in NFPA 59A (2001 edition) at 11.5.5.1(e) (incorporated

by reference in 49 CFR Part 193) instead of the current requirements in 49 CFR Part 193.2619 and correct this discrepancy in requirements.[1]

The existing regulatory language requires operators to inspect PRDs annually. AGA and INGAA are requesting that the testing requirements align with the industry standards outlined in NFPA 59A (2001), which allows PRDs to be inspected and tested at intervals not exceeding 5 years plus 3 months, except for stationary LNG tank relief valves, which must be inspected and tested at least once every two calendar years, at intervals not to exceed 30 months.

Additionally, PHMSA should consider allowing operators the option to develop a risk-based inspection program, consistent with existing technical standards, such as API Recommended Practice (RP) 576 and API RP 580.

The Associations actively participate in gas voluntary national consensus standards development organizations, with several member companies' personnel serving as NFPA Technical Committee members (NFPA 59A LNG Technical Committee), and believe this amendment would align with existing national consensus standards.

As described in more detail below, the Associations believe that this amendment will not increase the risk to LNG facilities or to the pipeline system. In fact, there is an increased risk with implementing the regulation as written. The purpose of this petition is aimed at reducing unnecessary risk associated with the preparation for and removal, inspection, testing and reinstallation of PRDs on an annual basis required under the current regulation (49 CFR Part 193) which is overly prescriptive, contrary to industry standards, and does not contribute to reducing operational risk.

The Associations' primary reason for recommending the revision is to reduce system risk. However, the amendments proposed have the additional benefit of reducing the cost impact to customers (see page 8), without compromising safety. PHMSA could consider packaging this regulatory change into its response to the Office of Secretary's Notification of Regulatory Review, which was published in the Federal Register on October 2, 2017 (82 Fed. Reg. 4575). It is rare for PHMSA to be presented with an opportunity to make a rule change that enhances the safety of the public and the safety of the operator's personnel, while making significant reductions in costs to the industry.

Proposed Amendment to 49 CFR Part 193.2619 (190.331 (b)(2))

Below, the Associations propose recommended edits to the existing code language, and provide additional information to support this amendment.

193.2619 Control systems.

(a) Each control system must be properly adjusted to operate within design limits.

[1] NFPA 59A is a voluntary consensus standard within the meaning of OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*. OMB Circular A-119 is intended to, among other things, encourage federal agencies to benefit from the expertise of the private sector and reduce reliance on government-unique standards where an existing voluntary standard would suffice.

(b) If a control system is out of service for 30 days or more, it must be inspected and tested for operational capability before returning it to service.
(c) Control systems in service, but not normally in operation, such as ~~relief valves and~~ automatic shutdown devices, and control systems for internal shutoff valves for bottom penetration tanks must be inspected and tested once each calendar year, not exceeding 15 months, with the following exceptions:
(1) Control systems **except relief valves** used seasonally, such as for liquefaction or vaporization, must be inspected and tested before use each season.
(2) Control systems that are intended for fire protection must be inspected and tested at regular intervals not to exceed 6 months.
(d) Control systems **except relief valves** that are normally in operation, such as required by a base load system, must be inspected and tested once each calendar year but with intervals not exceeding 15 months.
(e) **Relief valves shall be inspected and tested in accordance with NFPA 59A (2001 edition) at 11.5.5.1(e)[2] (incorporated by reference, see 193.2013) and;**
(1) Relief valves must be inspected and tested for verification of the valve seat lifting pressure and reseating.

Petitioners Interest (190.331 (b)(3))

The Associations' interest in pursuing this petition is driven by the intent to minimize unnecessary risk associated with the preparation for and removal, inspection, testing and reinstallation of pressure relief valves on an annual basis required under the current regulation (49 CFR Part 193.2619). If the petition is acceptable to PHMSA and the proposed edits to Part 193.2619 are implemented, the risk to operator personnel associated with annual testing of PRDs will be reduced by a factor of 4 across the entire industry LNG fleet (125 +/- facilities in the U.S. based on PHMSA LNG Annual Reporting Data).

Comments and Data Supporting the Petition (49 CFR Part 190.331 (b)(4))

Intent of PRD Inspection and Testing

The inspection and maintenance of PRDs identifies integrity issues such as corrosion, normal service wear and other abnormalities that would affect the reliability of the equipment. PRDs in LNG plants are not typically subject to the effects of corrosion and as such their inspection / testing interval can be extended without an impact to their performance and reliability. Vast numbers of PRDs in LNG facilities operate in clean, noncorrosive, non-fouling processes and are capable of functioning as designed for 5 or more years between scheduled inspections and testing. The Associations support PHSMA's goal to increase safety of the system, and believe the amendments proposed do not compromise the safety or reliability of the system.

[2] Excerpt from NFPA 59A (2001) 11.5.5.1 (e): "Stationary LNG tank relief valves shall be inspected and set point tested at least once every two calendar years, with intervals not exceeding 30 months, to ensure that each valve relieves at the proper setting. All other relief valves protecting hazardous fluid components shall be randomly inspected and set point tested at intervals not exceeding 5 years plus 3 months."

Incident Statistics

The LNG industry has a commendable safety record which continues to be upheld by multiple layers of protection as required by federal regulations and consensus standards. LNG companies worldwide have adopted inspection and testing intervals for PRDs consistent with NFPA 59A, or alternatively applied a risk-based approach.

A review of LNG facility related incidents dating back to the 1944 Cleveland East Ohio Gas Company incident, including publicly available incident reporting data from PHMSA, does not indicate that any of the documented incidents from within the United States or those that have occurred internationally were caused by or escalated because of ineffective PRD inspection and testing activities.

Risk Mitigation

Mitigating risk of personal injury, loss of life, and physical damage to property and the environment are the primary considerations in design, construction and operation of LNG facilities. This risk mitigation is partially accomplished by the advancement of regulations, codes and standards that are applicable to these LNG plants.

There is an inherent risk associated with the task of removing or reinstalling PRDs in an LNG plant. As noted above, the annual inspection interval outlined within 193.2619 is overly prescriptive for addressing risks that are uncommon for LNG facilities, such as corrosion. However, the annual inspection frequency increases the risk to operator personnel. To demonstrate the increase of some inherent risks, below the Associations outline the activities that Operators perform during annual inspection and maintenance of their PDR's:

Human Error	Tag out/lock out, error in purging or re-gassing, etc.
Worker Safety	Safety near heavy equipment, high elevations, cranes, etc.
Release of Gas	Damage PRDs during handling, incorrect installation, tightening, etc.

Operators take precautions to identify and mitigate potential threats that could be created by PRD maintenance activities. However, due to the nature of the hazardous environment, risks are present that could be impacted by human factors. These activities are examples where human factors and the associated opportunities for errors can lead to serious consequences including injury, death and damage to the facility. The Associations encourage PHMSA to weigh the reduction in human errors into account when considering applying industry standards such as NFPA 59A.

Furthermore, PRDs in LNG plants are typically located in hazardous areas along with the systems they are protecting and require careful planning and execution of plans/procedures to ensure their safe removal, testing, and reinstallation. The proposed amendments allow operators to re-allocate their resources and personnel to prioritize work that will achieve greater risk reduction than annual PRD inspection and testing.

Below is a summary of current activities operators must currently perform annually to inspect and test each PRD:

- Permit to work,

- Job safety analysis,
- Job site evaluation,
- Hot work permitting,
- Energy control isolation planning and execution (tag and lockout),
- Control of ignition sources,
- Depressurization,
- Purge planning and execution,
- Proper use of PPE (personal protective equipment),
- Applying safety requirements when working at elevated surfaces, fall protection (platform, structures, towers, vessels, tanks, piping arrangements),
- Applying crane and rigging safety requirements for larger PRD removal and reinstallation,
- Physical removal of the correct PRD from a system that has been thoroughly and effectively tagged, locked out, depressurized, purged,
- Installation of blind flanges, fittings on the system where the PRD was removed utilizing appropriate bolting, fastening, tightening of installed blinds, fittings,
- Thorough and effective inspection / testing of the PRD by trained and/or certified maintenance technicians including accurate records of the inspection / testing,
- Reinstallation of the PRD after its maintenance utilizing applicable bolting, fastening, tightening, torqueing of the reinstalled valve to prevent leakage during operation.
- Purge back into service,
- Pressurization of system and leak checks,
- Removal of the tags / locks associated with the energy isolation, and
- Returning the system valves to their normal operating positions

Ensuring Consistency within Regulatory Language

The 2001 edition of the NFPA 59A Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG) is utilized within the United States as it is incorporated by reference in 49 CFR Part 193. The NFPA 59A LNG Standard is also widely utilized internationally at LNG facilities worldwide.

NFPA 59A (2001) and all later editions of NFPA 59A allows PRD inspection and testing requirements at intervals not exceeding 5 years plus 3 months, except for stationary LNG tank relief vales, which must be inspected and tested at least once every two calendar years, at intervals not to exceed 30 months. The Associations recommend that PHMSA incorporate the testing and inspection requirements within NFPA 59A within Part 193 for consistency.

The current regulatory requirement in Part 193 for annual inspection and testing to verify relief valve operation (lifting at set pressure and reseating) is also contrary to national consensus standards in other U.S. energy sectors like refineries and processing facilities (see table below which lists several of these standards) and significantly increases the risk profile, without a recognized benefit, to personnel performing the work more frequently and to the equipment itself being handled and exercised excessively and unnecessarily.

The American Petroleum Institute (API) has published recommended practices and codes that are pertinent to the inspection and testing of PRDs. These documents are regularly used by the larger universe of process industries. These API recommended practices and other risked based inspection consensus

standards are currently being considered for incorporation by reference in the next edition of the NFPA 59A Standard.

API RP 576 "Inspection of Pressure Relieving Devices" provides a basis for inspection and testing to adequately address risk based on service and/or operating history.

API RP 576 has been successfully applied in hundreds of process facilities, for tens of thousands of PRDs, for many decades.

Section 5 of API RP 576 cautions operators on improper PRD handling that may affect the precision performance of the equipment (see excerpt from API RP 576 below). Excessively frequent testing, as currently required by 49 CFR Part 193, increases the likelihood of PRD degradation due to handling.

> *5.9.3 During Maintenance*
> *Pressure-relief valve parts are precision items manufactured to extremely close tolerances. Improper handling can degrade these tolerances, destroying the basic valve alignment on which the fine, exacting performance characteristics of the device primarily depend.*

API 510 "Pressure Vessel Inspection Code" addresses all aspects of pressure vessel inspections which include pressure vessel appurtenances such as the PRDs that aid in protecting the pressure vessel from over pressurization. To that point, the API 510 has a section on pressure-relieving devices that includes inspection and testing intervals as follows:

> *6.6.3.2 Unless documented experience and/or a RBI assessment indicates that a longer interval is acceptable, test and inspection intervals for pressure-relieving devices in typical process services should not exceed:*
> *a) 5 years for typical process services, and*
> *b) 10 years for clean (nonfouling) and noncorrosive services.*

Note that API 510 allows a 10-year inspection/testing interval for clean, nonfouling, noncorrosive services. The majority of PRD in LNG facilities protecting hydrocarbon-based gases/liquids systems are nonfouling, noncorrosive services.

API RP 580 "Risk-Based Inspection" is another generally accepted recommended practice in common use by the Oil & Gas industry. PRDs are covered under the scope of this standard and contain requirements for establishing inspection intervals based on Risk-Based Inspection (RBI) analysis versus rule-based. API RP 580 references the two standards previously discussed, API 510 and API RP 576.

The following table includes a list of other well-established consensus standards with long standing PRD testing and inspection requirements. Energy industry sector facilities that apply these standards have not and are not experiencing industrial incidents related to ineffective PRD testing and/or inspection frequencies.

NFPA 58	Liquefied Petroleum Gas Code (2004) Similar requirements in 2017 NFPA 58 at E.2.3	E.2.3 Pressure Relief Valve Testing (PRV) Frequent testing is not considered necessary. Recommends testing PRV's on containers >2,000 gal water capacity at approximately 10 year intervals.	~10 years
NFPA 59	Utility-LP Gas Plant Code (2004) Similar requirements in 2015 NFPA 59 at 10.1.4	10.1.4 (Testing Relief Devices) Relief devices, other than hydrostatic relief valves, shall be tested for proper operation at intervals not exceeding 5 years.	≤ 5 years
NFPA 59A	Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG) 2001 edition. Similar requirements in 2016 NFPA 59A at 14.8.10.6 and 14.8.10.7	11.5.5.1(e) Stationary LNG tank relief valves shall be inspected and set-point tested at least once every 2 calendar years, not exceeding 30 months. All other relief valves protecting hazardous fluid components shall be randomly inspected and set-point tested at intervals not exceeding 5 years + 3 months.	≤ 2 Calendar Years ≤ 5 years
API 510	Pressure Vessel Inspection Code, (2014)	6.6.3.2 (Inspection Intervals) Unless documented experience and/or a RBI assessment indicates that a longer interval is acceptable, test and inspection intervals for pressure-relieving devices in typical process services should not exceed: a) 5 years for typical process services, and b) 10 years for clean (nonfouling) and noncorrosive services.	≤ 5 year ≤ 10 year
API RP 576	Inspection of Pressure-Relieving Devices (2017)	6.4 (Inspection Frequency) Varies widely with various operating conditions and environments to which relief devices are subjected; more frequent when corrosion, fouling, leakage problems occur. Historical records of tests and service for each device guide establishment of safe and economical inspection frequencies. Establish a definite interval for each device, depending on operating experiences; revise as justified by test records and consistency of results. API 510 says max. 10 yr. Investigate regulators' frequency requirements to avoid conflict. Visual on-stream inspections ≤ 5 yr.	[≤ 10 years]
NBIC	National Board Inspection Code, Part 2 Inspection	Part 2, Section 2, 2.5.8 f) Recommended Inspection and Testing Frequencies for Pressure Relief Devices – Where test records and/or history are not available, the following inspection and test frequencies are suggested	- Steam – Annual - Air and dry clean Gases 3 years -PRDs in combination with rupture discs – 5 years - Propane, Refrigerants – 5 years

A review of documentation from several recognized PRD manufactures indicate that many do not recommend an inspection / testing frequency for the PRDs. They emphasize that PRDs are important safety devices that require inspection and testing at intervals appropriate for the equipment and products

they protect and generally indicate that federal, state and local jurisdictional requirements must be followed. This petition does not contradict the manufacturers' recommendations but only proposes to better align with the inspection / testing intervals identified in NFPA 59A and other national consensus standards based upon the system and service the PRD is protecting.

Cost/Benefit Potential Impacts (190.331 (c)(1))

AGA member company LNG facilities, on average, have 75 PRDs per plant serving in clean hydrocarbon and inert gas service (air, nitrogen, natural gas, ethane, propane, butane, and LNG). As detailed below, there is a substantial resource burden associated with the PRD inspection and testing frequency currently required in 49 CFR Part 193.

Estimated LNG Plants	125
Valves per Plant	75
O&M Cost per Valve	$300
Annual Cost	$2,812,500
Savings over a 5yr window from Amendments	**$11,250,000**

It should be noted that the example above is representative of the average LNG facility, but does not reflect LNG export facilities. An LNG export facility can have thousands of PRDs.

Potential Impacts – Direct Effects on States, Relationship between Federal Government and States (190.331 (c)(2))

State pipeline safety enforcement agencies have each demonstrated a continual commitment to the enforcement of the federal safety regulations and standards as federal regulations are revised. This petition and the proposed amendments will not affect that relationship and continual dedication to safety shared by both the State and Federal Government.

Potential Impacts – Regulatory Burden (190.331 (c)(3))

If PHMSA acts on this petition as proposed, there will be an immediate reduction in regulatory burden as well as a reduction in risk to plant personnel.

The intent of this petition, while primarily centered on mitigating unnecessary risks associated with annual PRD inspection and testing required by Part 193, also aligns with the intent of a series of recently signed Presidential Executive Orders (E.O.s) as follows:

January 30, 2017, E.O. 13771, "Reducing Regulation and Controlling Regulatory Costs" was issued by the President where by whenever an executive department or agency publicly proposes for notice and comment or otherwise promulgates a new regulation it must identify at least two existing regulations to be repealed. This petition if acted on should be viewed as a repeal which reduces risk, reduces regulatory burden, and may enable PHMSA to pursue other regulatory actions.

February 24, 2017, E.O. 13777, "Enforcing the Regulatory Reform Agenda" was issued by the President where each agency must establish a Regulatory Reform Task Force (RRTF) to evaluate existing regulations, and make recommendations for their repeal, replacement, or modification. As part of this process, each agency is directed to seek input/assistance from entities significantly affected by its regulations.

On March 28, 2017, E.O. 13783, "Promoting Energy Independence and Economic Growth" was issued by the President requiring agencies to review all existing regulations, orders, guidance documents, policies, and other similar agency actions that potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources. In response to the Presidential E.O.'s listed above, the DOT issued a notice on October 1, 2017, in the Federal Register seeking written input from the public on existing regulations and other agency actions that are good candidates for repeal, replacement, or modification, where the actions do not compromise safety. Here too, this petition is an example of an opportunity for PHMSA to consider acting to reduce the regulatory burden on energy sectors (including LNG) while also mitigating unnecessary risks associated with annual inspection and testing of PRDs.

Potential Impacts – Recordkeeping and Reporting (190.331 (c)(4))

Recordkeeping requirements related to PRD inspection/testing are identified in 49 CFR Part 193.2639 and require operators to keep records of the date and type of each maintenance activity performed on each component for a period of not less than 5 years. If PHMSA were to act on this petition as proposed, there would be an approximate reduction in PRD maintenance records by 80% over the proposed 5 year inspection / testing interval, thus reducing the regulatory burden on both operators and enforcement agencies inspecting PRD maintenance records.

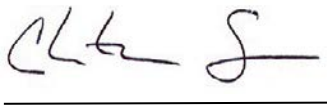
Potential Impacts – Natural and Social Environments (190.331 (c)(5))

If PHMSA were to act on this petition as proposed the following results are anticipated:

- No increased risk to the public located near LNG facilities, as there is no recognized increase in risk at LNG facilities due to testing and inspecting PRD in accordance with NFPA 59A
- Reduced greenhouse gas releases, as venting to the atmosphere during preparation to remove PRD from the protected system for testing would occur much less frequently than under current annual testing requirements.
- Reduced risk of injury to LNG facility employees.

In conclusion, based upon the rationale provided in this petition, the Associations respectfully request that PHMSA grant this petition to adopt the NFPA 59A (2001) requirements at 11.5.5.1(e) for inspection and testing of LNG plant safety relief devices by revising language in 49 CFR Part 193.2619. Additionally, PHMSA should consider allowing operators the option to develop a risk-based inspection program, consistent with existing technical standards, such as API RP 576 and API RP 580. The Associations encourage PHMSA to act in a timely fashion and encourage PHMSA to consider this rule change as part of its response to the Office of Secretary's Notification of Regulatory Review on October 2, 2017.

Respectfully submitted,



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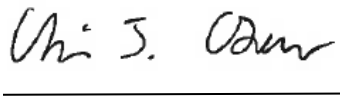

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