



U.S. Department
of Transportation

Pipeline and Hazardous Materials
Safety Administration

1200 New Jersey Avenue SE
Washington DC 20590

OCT 04 2018

Mr. David J. Chislea
Manager of Gas Operations
Michigan Public Service Commission
7109 West Saginaw Highway
Lansing, MI 48917

Dear Mr. Chislea:

In an April 4, 2018, letter to the Pipeline and Hazardous Materials Safety Administration (PHMSA), you requested an interpretation of 49 Code of Federal Regulations (CFR) Part 192. Specifically, you requested interpretation regarding requirements for inspection and testing of relief devices under § 192.731(a).

You asked for clarification of the applicability of § 192.731(a) as it relates to §§ 192.201, 192.739, and 192.743 for the inspection and testing of compressor station relief valves and which compressor station relief valves must be inspected under § 192.731(a). In addition, you provided summary of some interpretations; regulatory history, and enforcement actions relevant to this request.

You asked for interpretations related to the following questions:

1. Are compressor station relief valves that protect downstream facilities, when a pressure control failure causes an exceedance of MAOP (maximum allowable operating pressure), the only relief valves required to be inspected under 49 CFR 192.731(a)?

PHMSA Reply:

No. Section 192.731(a) states that “each pressure relieving device in a compressor station must be inspected and tested” Therefore all relief devices (overpressure control devices) used for MAOP overpressure control for gas flow, thermal, and redundant purposes in gas carrying transportation pipeline facilities in a compressor station must be installed, maintained and inspected in accordance with the applicable paragraphs of §§ 192.201, 192.731, 192.739, and 192.743. The relief devices must be sized and have set pressures for all operating conditions that can lead to MAOP overpressure in accordance with §§ 192.201, 192.739, and 192.743.

2. If the answer to question #1 is "no," what relief valves must be inspected at a minimum, such as thermal relief or redundant relief valves that were not explicitly installed to comply with the inspection and testing requirements of 49 CFR 192.731(a)?

PHMSA Reply:

All gas carrying transportation pipeline facilities in a compressor station must have MAOP overpressure control and must be maintained and inspected in accordance with applicable paragraphs of §§ 192.201, 192.731, 192.739, and 192.743.

3. If the answer to question #1 is "no," what inspection intervals are required on non-MAOP protecting relief valves (such as thermal relief or redundant relief valves), specifically in regards to:
 - a. 49 CFR 192.739?

PHMSA Reply:

Section 192.739 requires each relief valve to be inspected and tested to determine that it is adequate from the standpoint of relief volume (capacity) and MAOP, and tested for reliability and correct pressure setting based upon MAOP at least once each calendar year with intervals not to exceed 15 months.

- b. 49 CFR 192.743?

PHMSA Reply:

Section 192.743 requires each relief valve to be reviewed and determined to have sufficient capacity by testing the device in place or by review and calculations, at least once each calendar year with intervals not to exceed 15 months.

- c. 49 CFR 192.201?

PHMSA Reply:

Section 192.201 specifies capacity requirements for pressure relieving and limiting stations, but does not specify additional requirements (based upon relief valve function - gas flow, thermal, and redundant purposes) for testing relief valves, when testing them to meet the requirements of §§ 192.201, 192.731, 192.739, and 192.743.

Section 192.743 requires each relief valve to be reviewed, inspected and maintained for relief volume and MAOP and tested for reliability and correct pressure setting based upon MAOP once each calendar year with intervals not to exceed 15 months.

4. If the answer to question #1 is "no," how are non-MAOP protecting relief valves expected to comply with the requirement of 49 CFR 192.739 in regards to being "set to control or relieve at the correct pressure consistent with the pressure limits of § 192.201(a)" if they are not installed to limit MAOP but for a different purpose, such as redundant relief valves or thermal relief valves in the case of ASME pressure vessels?

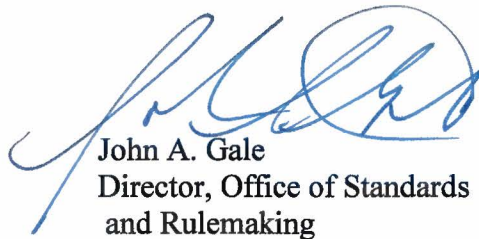
PHMSA Reply:

Thermal relief valves installed on ASME pressure vessels would need to protect the pressure vessels, when all valves and connecting piping used to isolate the vessels are closed. The ASME pressure vessel thermal relief valve settings should be based upon the compressor station piping MAOP. If the ASME pressure vessel, isolation valves, connecting piping, and fittings used to isolate the ASME pressure vessel have a documented higher MAOP than the compressor station piping, then a higher MAOP may be used for the thermal relief set pressure.

Thermal relief or any redundant relief valves for gas transmission pipelines must be tested and maintained in accordance with applicable §§ 192.201, 192.731, 192.739, and 192.743.

If we can be of further assistance, please contact Tewabe Asebe at 202-366-5523.

Sincerely,



John A. Gale
Director, Office of Standards
and Rulemaking

Michigan Public Service Commission
7109 W. Saginaw Highway
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April 4, 2018

Office of Pipeline Safety (PHP-30)
Pipeline and Hazardous Materials Safety Administration (PHMSA)
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Subject: Request for Interpretation of 49 CFR 192.731(a)

Dear Sir or Madam,

The Michigan Public Service Commission (MPSC) is formally requesting an interpretation of 49 CFR 192.731(a) entitled "Compressor stations: Inspection and testing of relief devices."

49 CFR 192.731 states:

(a) Except for rupture discs, each pressure relieving device in a compressor station must be inspected and tested in accordance with §§192.739 and 192.743, and must be operated periodically to determine that it opens at the correct set pressure.

49 CFR 192.739 states:

(a) Each pressure limiting station, relief device (except rupture discs), and pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests 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) Except as provided in paragraph (b) of this section, set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a); and
- (4) Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

(b) For steel pipelines whose MAOP is determined under §192.619(c), if the MAOP is 60 p.s.i. (414 kPa) gage or more, the control or relief pressure limit is as follows:

IF THE MAOP PRODUCES A HOOP STRESS THAT IS:	THEN THE PRESSURE LIMIT IS:
Greater than 72 percent of SMYS	MAOP plus 4 percent.
Unknown as a percentage of SMYS	A pressure that will prevent unsafe operation of the pipeline considering its operating and maintenance history and MAOP.

49 CFR 192.743 states:

(a) Pressure relief devices at pressure limiting stations and pressure regulating stations must have sufficient capacity to protect the facilities to which they are connected. Except as provided in §192.739(b), the capacity must be consistent with the pressure limits of §192.201(a). This capacity must be determined at intervals not exceeding 15 months, but at least once each calendar year, by testing the devices in place or by review and calculations.

(b) If review and calculations are used to determine if a device has sufficient capacity, the calculated capacity must be compared with the rated or experimentally determined relieving capacity of the device for the conditions under which it operates. After the initial calculations, subsequent calculations need not be made if the annual review documents that parameters have not changed to cause the rated or experimentally determined relieving capacity to be insufficient.

(c) If a relief device is of insufficient capacity, a new or additional device must be installed to provide the capacity required by paragraph (a) of this section.

49 CFR 192.201(a)(2)(i) states:

(a) Each pressure relief station or pressure limiting station or group of those stations installed to protect a pipeline must have enough capacity, and must be set to operate, to insure the following:

* * *

(2) In pipelines other than a low pressure distribution system:

(i) If the maximum allowable operating pressure is 60 p.s.i. (414 kPa) gage or more, the pressure may not exceed the maximum allowable operating pressure plus 10 percent, or the pressure that produces a hoop stress of 75 percent of SMYS, whichever is lower;

Specifically, the MPSC is requesting clarification of the applicability of 49 CFR 192.731(a) as it relates to 49 CFR 192.739, 49 CFR 192.743, and 49 CFR 192.201 regarding inspection and testing of compressor station relief valves and which compressor station relief valves must be inspected under 49 CFR 192.731(a).

PHMSA does not define "pressure relieving devices" in Part 192. However, in the 1968 edition of USAS B31.8, the term pressure relieving device (and later incorporated into subsequent

editions of B31.8 as a definition of "pressure relief station") was defined as "equipment installed to vent gas from a system being protected in order to prevent the gas pressure from exceeding a predetermined limit." In the absence of regulatory definitions, PHMSA has relied on the B31.8 definitions as evidenced in its 1988 interpretation letter.¹

PHMSA has issued several interpretations related to the scope of 49 CFR 192.731(a) since this regulation was first introduced into the federal pipeline safety regulations. The word "each" in 49 CFR 192.731(a) suggests that this rule applies to every relief valve in a compressor station involved in the transportation of gas, suggesting that any relief valve that would be included in a pipeline facility as defined in 49 CFR 192.3 would fall under this requirement.

Through Interpretation PI-99-0100 issued February 8, 1999, regarding 49 CFR 192.731, 49 CFR 192.739, and 49 CFR 192.743, PHMSA clarified that inspection and testing requirements of the interpreted rules "apply to all gas relief devices in compressor stations. Only relief devices on non-gas carrying equipment are exempt." PHMSA further explained that "the interpretation applies to gas relief devices on any vessel or piping in the compressor station that is used in the transportation of gas" but that it was "unclear whether §192.731 was intended to cover devices on vessels or piping that are unrelated to gas transportation by pipeline." PHMSA clarified that vessels or piping used in gas transportation did not necessarily have to carry gas in transportation, but simply be *used* in the transportation. Lastly, PHMSA stated that blanket gas injected inside vessels containing relief devices would then render the vessel and relief device subject to these rules provided the vessel was used in gas transportation.

Federal Amendment 192-93 was issued on September 15, 2003, (effective October 15, 2003). This amendment included revisions to 49 CFR 192.739 and 49 CFR 192.743 to address NAPS's request for PHMSA to clarify what was intended by the term "correct pressure" in those rules. In providing the clarification, PHMSA introduced a reference to 49 CFR 192.201(a) as the basis for determining device set points for limiting to the "correct pressure." 49 CFR 192.201(a) is the Part 192 requirement for establishing set points for devices installed to protect the pipeline upon pressure control or other failure that would allow the MAOP to be exceeded.

On January 22, 2004, PHMSA issued Interpretation PI-04-0101 regarding 49 CFR 192.739 where it was stated that "it is clear that any regulator serving a downstream piping is a pressure regulating station and is subject to inspection and testing in accordance with §192.739. Conversely, a regulator that is NOT intended to protect a downstream piping, but rather serves only to protect end-use equipment, such as a compressor, would not be subject to §192.739."

There is a viewpoint that suggests that the incorporation of 49 CFR 192.201(a) into 49 CFR 192.739 and 49 CFR 192.743 defines the scope of 49 CFR 192.731. Since the inspection and testing of relief valves must be done in accordance with 49 CFR 192.739 and 49 CFR 192.743, it could be assumed that only those relief valves installed to limit the pressure consistent with 49 CFR 192.201(a) as a result of an overpressure above MAOP are subject to 49 CFR 192.731. This viewpoint is consistent with PHMSA Interpretation PI-04-0101, but not Interpretation PI-99-0100.

¹ PHMSA Letter of Interpretation to Harry Neel, PI-88-002 (Jun. 28, 1988).

Additionally, some relief devices (such as thermal relieving devices) in compressor stations on ASME pressure vessels are set in accordance with the ASME Boiler and Pressure Vessel Code, which is based on the Maximum Allowable Working Pressure of the vessel and not the MAOP of the piping system in which it is situated. These thermal reliefs are fire-sized to fulfill ASME BPVC requirements and are not intended to and cannot generally meet the requirements of 49 CFR 192.201(a).

However, the language in 49 CFR 192.731 does say *each* pressure relieving device in a compressor station must be inspected in accordance with 49 CFR 192.739 and 49 CFR 192.743, and based on Interpretation PI-99-0100, these ASME pressure vessels are used in the transportation of gas. It is clarification on this issue which is sought to be addressed in this request for an interpretation.

Listed below in chronological order is a summary of some interpretations, regulatory history, and enforcement actions relevant to the two described viewpoints regarding what is intended by "each" compressor station relief valve in 49 CFR 192.731 that must be inspected in accordance with 49 CFR 192.739 and 49 CFR 192.743.

1. **Interpretation PI-99-0100**
Issued February 8, 1999
49 CFR 192.731, 49 CFR 192.739, and 49 CFR 192.743

Interpretation states in part:

We previously said that these sections apply to all gas relief devices in compressor stations. Only relief devices on non-gas carrying equipment are exempt.

The interpretation also answers the following questions:

Question: Does the interpretation mean any vessel or piping in a compressor station that contains natural gas for whatever purpose is jurisdictional?

Answer: At a minimum, the interpretation applies to gas relief devices on any vessel or piping in the compressor station that is used in the transportation of gas. It's unclear whether §192.731 was intended to cover devices on vessels or piping that are unrelated to gas transportation by pipeline.

Question: Does the gas in the aforementioned vessels or piping have to be in transportation, i.e., passing through the vessel or piping *en route* to the consumer before the vessel or piping is considered jurisdictional?

Answer: Subpart M, and consequently §192.731, applies to the maintenance of pipeline facilities, i.e., things used in gas transportation by pipeline. It doesn't matter whether the vessel or piping actually carries gas in transportation. Although there may be a question whether a fuel gas line carries gas in transportation, it's certainly used in transportation and, therefore, a pipeline facility.

Question: Would blanket gas injected over the top of a liquid such as glycol in a tank (with a relief device) make the tank and relief device subject to the regulations?

Answer: Yes, if the tank is used in gas transportation by pipeline. Please let me know if you would like any further assistance.

**2. Amendment 192-93
In Effect October 15, 2003**

Revise §192.739(c) to read as follows:

§192.739 Pressure limiting and regulating stations: Inspection and testing.

(c) Set to control or relieve at the correct pressures consistent with the pressure limits of §192.201(a); and

Revise §192.743 to read as follows:

§192.743 Pressure limiting and regulating stations: Capacity of relief devices.

(a) Pressure relief devices at pressure limiting stations and pressure regulating stations must have sufficient capacity to protect the facilities to which they are connected consistent with the pressure limits of §192.201(a).

**3. Interpretation PI-04-0101
Issued January 22, 2004
49 CFR 192.739**

Interpretation states in part:

The question arises from small regulators ... that provides protection for operating, or end-use, equipment. These types of regulators are installed by the manufacturer of the equipment and are not intended to be inspectible by pipeline operators.

[I]t is clear that §192.739 is intended to address inspection and testing of pressure limiting and regulating stations that are necessary to maintain safe pressures on the pipeline facility, not on end-use equipment.

**4. PHMSA Enforcement CPF No. 3-2004-1007
Issued April 5, 2004
49 CFR 192.731**

Enforcement states in part:

At the Springville Compressor station, Enbridge did not inspect two relief valves for 2001 and 2002.

The two relief valves, PSV 108 and 208, are thermal relief valves on the compressor recycle loop. The relief valves had not been inspected since their installation in 2000.

5. **PHMSA Enforcement CPF No. 5-2004-0007**
Issued August 31, 2004
49 CFR 192.731

Enforcement states in part:

At the Vida Station, various pressure relief valves were not tested and inspected on a frequency of once each calendar year not to exceed 15 months. Those valves and the interval between inspections are listed below.

#1 Compressor Discharge (after cooler) ...05/10/02...08/18/03...15.5 months
#2 Compressor Discharge (after cooler) ...05/10/02...09/22/03...16.7 months
#3 Compressor Discharge (after cooler) ...05/20/02...09/22/03...16.3 months
#4 Compressor Discharge (after cooler) ...05/01/02...09/22/03...17.0 months
Boiler and Office Fuel...03/20/02...10/21/03... 19.9 months

6. **Amendment 192-96**
In Effect September 14, 2004

Revised 49 CFR 192.739 to read as follows:

§192.739 Pressure limiting and regulating stations: Inspection and testing.

(a) * * *

(3) Except as provided in paragraph (b) of this section, set to control or relieve at the correct pressure **consistent with the pressure limits of §192.201(a)**; and

* * *

(b) For steel pipelines whose MAOP is determined under §192.619(c), if the MAOP is 60 psi (414 kPa) gage or more, the control or relief pressure limit is as follows:

IF THE MAOP PRODUCES A HOOP STRESS THAT IS:	THEN THE PRESSURE LIMIT IS:
Greater than 72 percent of SMYS	MAOP plus 4 percent.
Unknown as a percentage of SMYS	A pressure that will prevent unsafe operation of the pipeline considering its operating and maintenance history and MAOP.

Revised 49 CFR 192.743 to read as follows:

§192.743 Pressure limiting and regulating stations: Capacity of relief devices.
(a) Pressure relief devices at pressure limiting stations and pressure regulating stations must have sufficient capacity to protect the facilities to which they are connected. Except as provided in §192.739(b), the capacity must be **consistent with the pressure limits of §192.201(a)**. This capacity must be determined at intervals not exceeding 15 months, but at least once each calendar year, by testing the devices in place or by review and calculations.

7. PHMSA Enforcement CPF No. 1-2009-1006
Issued December 30, 2010
49 CFR 192.739

Regarding assertions by the operator that relief valves that provide a secondary form of protection are not covered by §192.739, the order states in part:

In its Response, [operator] ... contested the allegation of violation with regard to the device at [a] Compressor Station, which the company argued is a secondary form of protection, personally operated by [operator] employees. Due to the nature of [this] Compressor Station device, Respondent asserted that it is not subject to the requirements of relief devices under 49 C.F.R. §192.739.

PHMSA agrees with [operator's] characterization of the relief valve at [this] Compressor Station listed in its Response. The valve is only a secondary form of protection and therefore is not covered by the testing and inspection requirements of 49 C.F.R. §192.739.

In a 2010 Final Order, PHMSA agreed that a fuel gas bypass relief valve was a secondary form of protection, and therefore not subject to the inspection and test requirements of §192.739.

In the subsequent Decision on Petition for Reconsideration regarding other relief valves, PHMSA states in part:

...if an operator has a relief valve of requisite capacity to protect the pipeline facility in case of a failure of pressure control, the guidance informs agency inspectors that PHMSA does not intend to enforce §192.743 against additional relief valves the operator chooses to install on the facility that are not otherwise required under Part 192.

Summary

In response to what is written in 49 CFR 192.731(a) as it relates to 49 CFR 192.739, 49 CFR 192.743, 49 CFR 192.201, and the listed interpretations, PHMSA enforcement, and amendments to Part 192, the MPSC is requesting a formal interpretation that responds to the following questions:

1. Are compressor station relief valves that protect downstream facilities when a pressure control failure causes an exceedance of MAOP the only relief valves required to be inspected under 49 CFR 192.731(a)?
2. If the answer to question #1 is "no," what relief valves must be inspected at a minimum, such as thermal relief or redundant relief valves that were not explicitly installed to comply with the inspection and testing requirements of 49 CFR 192.731(a)?
3. If the answer to question #1 is "no," what inspection intervals are required on non-MAOP protecting relief valves (such as thermal relief or redundant relief valves), specifically in regards to:
 - a. 49 CFR 192.739?
 - b. 49 CFR 192.743?
 - c. 49 CFR 192.201?
4. If the answer to question #1 is "no," how are non-MAOP protecting relief valves expected to comply with the requirement of 49 CFR 192.739 in regards to being "set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a)" if they are not installed to limit MAOP but for a different purpose, such as redundant relief valves or thermal relief valves in the case of ASME pressure vessels?

Your attention to these matters is appreciated.

Sincerely,

David J. Chislea
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