A. It shows that the requirements for relief devices (the primary alternative to a monitor regulator) can be traced back to the same "consistent with the pressure limits of §192.201(a)" standard that applies to monitor regulators.

Q. Has PHMSA issued interpretations regarding the pressure allowances for overpressure protection?

A. Yes. The first interpretation I will discuss was issued by PHMSA in 1982, and later amended when PHMSA concluded that its interpretation used imprecise language. The 1982 interpretation is Interpretation 192.201 14, dated September 16, 1982 (see Attachment F), which states:

> "The plain language of paragraphs (a), (b), and (c) makes it clear that the ***purpose of §192.743 is to assure that relief devices at pressure limiting and regulating stations have sufficient capacity*** to limit downstream pressure to the "***desired maximum pressure***." It follows that the term "required capacity" in paragraph (b) refers to the capacity of relief devices that is needed to achieve this purpose, and not to a capacity required by §192.201(a). …

PHMSA further stated:

> Section 192.201(a) prescribes capacities that apply to the design of pressure relief and limiting stations. The purpose of this rule is to assure that stations are installed with sufficient capacity to prevent accidental overpressure in connected facilities, based on specified safe pressure limits known at the time of design. As operating conditions change, these limits may exceed the "desired maximum pressure" of the facilities so that additional capacity would be required to meet §192.743. Therefore, the capacity requirements of §192.201(a) should not be used to determine the capacity of relief devices needed to meet §192.743."

William Hewitt 8/13/2015 12:50 PM
Deleted: 13

William Hewitt 8/13/2015 12:51 PM
Deleted: February 1

It should be noted that the requirements for the desired maximum pressure allowed by a monitor regulator would be no different than the desired maximum pressure for a relief device.

Q. Does that indicate that your interpretation is incorrect?

A. It might, except that the following year PHMSA was asked to reconsider that interpretation, and it do so in Interpretation 192.201 15 dated March 31, 1983 (see Attachment G):

> Upon reconsideration, we confirm the ***merits of the interpretation*** as it relates to ***applying §192.201 to judging the capacities required by §192.743***. However, we believe that the stated relationship between "desired maximum pressures" and MAOP could be misconstrued and result in a conflict with §192.201 and an unjustified burden for operators of existing relief valves.
>
> We believe the problem you have identified with Interpretation 82-9 [a/k/a Interpretation 102.201 14] would be resolved if the "***desired maximum pressure" under §192.743*** were interpreted to ***include a safe amount of pressure build-up above the MAOP. For valves subject to §192.201, the safe amount would be that set forth in §192.201***, and the ***capacities required by §§192.201 and 192.743 would be the same*** until allowable operating pressure limits change. For pre-existing relief valves that do not conform with the criteria of §192.201, the safe amount would be that which a prudent operator would have established when the valve was installed.
>
> Accordingly, a ***footnote has been added to Interpretation 82-9*** to correct the problem, and the interpretation is reissued. A copy of the reissued interpretation is enclosed.

The footnote that PHMSA added to Interpretation 82-9 states:

> 1/ for purposes of ***pressure relief capacity, operating pressure limits*** may be exceeded by a safe amount. ***Section 192.201 specifies the amounts for relief devices subject to that section***. The allowable amount for other relief devices installed before Section 192.201 became effective would be that which a prudent operator would have established under similar circumstances.

William Hewitt 8/13/2015 12:52 PM
Deleted: 13

Q. Does PHMSA's amended version of Interpretation 192.201 14 support your analysis concerning Section 192.201?

A. Yes, it does.

Q. Are there any more recent PHMSA interpretations that address the issues in Staff's NOV?

A. Yes. By letter dated September 5, 2014, Northern requested an interpretation from PHMSA addressing the specific overpressure protection settings for the New Hampshire Avenue Gate Station. By reply dated April 21, 2015 (see Attachment N to LeBlanc/Pfister testimony), PHMSA confirmed that system pressure is allowed to rise to 62 psig for a 56 psig MAOP system during a failure of the worker regulator. Unitil's question, and PHMSA's answer are provided below:

> Q. (2) During a system emergency, such as a failed worker regulator, on a high pressure distribution system with a properly established MAOP of 56 psig, does the operator violate 49 C.F.R. § 192.201(a) if the system pressure does not exceed 62 psig?
>
> A. No, ***the operator does not violate § 192.201(a)*** as long as the MAOP limits are met during a system emergency and the pipeline meets the Subpart D - Design of Pipeline Components requirements. In this case, ***the emergency operating limit is 62 psi (56 + 6 psi)***. Emergency operating overpressure conditions are only allowed for the time required to activate the overpressure protection device and are not meant for long term or frequently occurring normal operating or periodic maintenance conditions and, therefore, require immediate response by the operator either to shut down or reduce the operating pressure to the normal operating conditions.

There is no dispute that the pressure at the New Hampshire Avenue Gate Station peaked at 57.2 psig during the simulated failure of the worker regulator, which is less

William Hewitt 8/13/2015 12:52 PM
Deleted: 13

than the 62 psig allowed by Section 192.201(a)(2)(ii). PHMSA confirmed that there was no Code violation, notwithstanding that pressure within the station exceeded MAOP.

Q. Were there any issues raised by PHMSA regarding the testing of the overpressure protection that occurred on June 25, 2014, when Commission Staff directed that a failure of the worker regulator be simulated to assess the operation of Northern's over pressure protection?

A. Yes. PHMSA seems to disapprove of the practice of testing overpressure protection through a simulation of a failure of the worker regulator while those components are actively controlling system pressure: "[a] simulated test on a pressure limiting or regulator station that is not isolated from the system does not constitute a system emergency. It is a normal operation subject to the limitations described above. The pressure limiting or regulator station should be isolated from the system prior to any testing of buildup and set points."

Although I cannot whole-heartedly support that position (especially with properly trained pressure mechanics on site to ensure the safety of the system), if such a simulation does constitute a violation of Section 192.619, it was a violation that resulted from Northern's compliance with the directives of Commission Staff.

A. It shows that the requirements for relief devices (the primary alternative to a monitor regulator) can be traced back to the same "consistent with the pressure limits of §192.201(a)" standard that applies to monitor regulators.

Q. Has PHMSA issued interpretations regarding the pressure allowances for overpressure protection?

A. Yes. The first interpretation I will discuss was issued by PHMSA in 1982, and later amended when PHMSA concluded that its interpretation used imprecise language. The 1982 interpretation is Interpretation 192.201 14, dated September 16, 1982 (see Attachment F), which states:

> "The plain language of paragraphs (a), (b), and (c) makes it clear that the ***purpose of §192.743 is to assure that relief devices at pressure limiting and regulating stations have sufficient capacity*** to limit downstream pressure to the "***desired maximum pressure***." It follows that the term "required capacity" in paragraph (b) refers to the capacity of relief devices that is needed to achieve this purpose, and not to a capacity required by §192.201(a). …

PHMSA further stated:

> Section 192.201(a) prescribes capacities that apply to the design of pressure relief and limiting stations. The purpose of this rule is to assure that stations are installed with sufficient capacity to prevent accidental overpressure in connected facilities, based on specified safe pressure limits known at the time of design. As operating conditions change, these limits may exceed the "desired maximum pressure" of the facilities so that additional capacity would be required to meet §192.743. Therefore, the capacity requirements of §192.201(a) should not be used to determine the capacity of relief devices needed to meet §192.743."

It should be noted that the requirements for the desired maximum pressure allowed by a monitor regulator would be no different than the desired maximum pressure for a relief device.

Q. Does that indicate that your interpretation is incorrect?

A. It might, except that the following year PHMSA was asked to reconsider that interpretation, and it do so in Interpretation 192.201 15 dated March 31, 1983 (see Attachment G):

> Upon reconsideration, we confirm the ***merits of the interpretation*** as it relates to ***applying §192.201 to judging the capacities required by §192.743***. However, we believe that the stated relationship between "desired maximum pressures" and MAOP could be misconstrued and result in a conflict with §192.201 and an unjustified burden for operators of existing relief valves.
>
> We believe the problem you have identified with Interpretation 82-9 [a/k/a Interpretation 102.201 14] would be resolved if the "***desired maximum pressure" under §192.743*** were interpreted to ***include a safe amount of pressure build-up above the MAOP. For valves subject to §192.201, the safe amount would be that set forth in §192.201***, and the ***capacities required by §§192.201 and 192.743 would be the same*** until allowable operating pressure limits change. For pre-existing relief valves that do not conform with the criteria of §192.201, the safe amount would be that which a prudent operator would have established when the valve was installed.
>
> Accordingly, a ***footnote has been added to Interpretation 82-9*** to correct the problem, and the interpretation is reissued. A copy of the reissued interpretation is enclosed.

The footnote that PHMSA added to Interpretation 82-9 states:

> 1/ for purposes of ***pressure relief capacity, operating pressure limits*** may be exceeded by a safe amount. ***Section 192.201 specifies the amounts for relief devices subject to that section***. The allowable amount for other relief devices installed before Section 192.201 became effective would be that which a prudent operator would have established under similar circumstances.

Q. Does PHMSA's amended version of Interpretation 192.201 14 support your analysis concerning Section 192.201?

A. Yes, it does.

Q. Are there any more recent PHMSA interpretations that address the issues in Staff's NOV?

A. Yes. By letter dated September 5, 2014, Northern requested an interpretation from PHMSA addressing the specific overpressure protection settings for the New Hampshire Avenue Gate Station. By reply dated April 21, 2015 (see Attachment N to LeBlanc/Pfister testimony), PHMSA confirmed that system pressure is allowed to rise to 62 psig for a 56 psig MAOP system during a failure of the worker regulator. Unitil's question, and PHMSA's answer are provided below:

> Q. (2) During a system emergency, such as a failed worker regulator, on a high pressure distribution system with a properly established MAOP of 56 psig, does the operator violate 49 C.F.R. § 192.201(a) if the system pressure does not exceed 62 psig?
>
> A. No, ***the operator does not violate § 192.201(a)*** as long as the MAOP limits are met during a system emergency and the pipeline meets the Subpart D - Design of Pipeline Components requirements. In this case, ***the emergency operating limit is 62 psi (56 + 6 psi)***. Emergency operating overpressure conditions are only allowed for the time required to activate the overpressure protection device and are not meant for long term or frequently occurring normal operating or periodic maintenance conditions and, therefore, require immediate response by the operator either to shut down or reduce the operating pressure to the normal operating conditions.

There is no dispute that the pressure at the New Hampshire Avenue Gate Station peaked at 57.2 psig during the simulated failure of the worker regulator, which is less

than the 62 psig allowed by Section 192.201(a)(2)(ii). PHMSA confirmed that there was no Code violation, notwithstanding that pressure within the station exceeded MAOP.

Q. Were there any issues raised by PHMSA regarding the testing of the overpressure protection that occurred on June 25, 2014, when Commission Staff directed that a failure of the worker regulator be simulated to assess the operation of Northern's over pressure protection?

A. Yes. PHMSA seems to disapprove of the practice of testing overpressure protection through a simulation of a failure of the worker regulator while those components are actively controlling system pressure: "[a] simulated test on a pressure limiting or regulator station that is not isolated from the system does not constitute a system emergency. It is a normal operation subject to the limitations described above. The pressure limiting or regulator station should be isolated from the system prior to any testing of buildup and set points."

Although I cannot whole-heartedly support that position (especially with properly trained pressure mechanics on site to ensure the safety of the system), if such a simulation does constitute a violation of Section 192.619, it was a violation that resulted from Northern's compliance with the directives of Commission Staff.