

PI-04-0105

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh St., S.W.
Washington, D.C. 20590

April 20, 2004

Mr. Connor J. Deering
Mueller Company - Gas Products Division
Decatur, IL 62525

Dear Mr. Deering:

This is in response to your e-mail of March 26, 2004, in which you request an interpretation of the provisions of the Federal gas pipeline safety regulations at 49 CFR 192.145, *Valves*, as it relates to the use of brass valves in gas pipeline systems.

Although the use of brass body valves in gas pipeline systems is not explicitly excluded by the pipeline safety regulations, the pipeline operator must be able to demonstrate how these valves comply with the regulations. This includes a showing that the valves comply with American Petroleum Institute standard API 6D, *Specification for Pipeline Valves*, or an equivalent standard. The regulations also require the operator to have written procedures for installation and maintenance of brass valves. In addition, where a gas distribution pipeline system is regulated by a state agency, the state is free to be more restrictive, as long as it is not inconsistent with the Federal regulations.

Brass body valves are typically used as shutoff valves on gas service lines. It has been asserted by some suppliers that such valves comply with the requirements of the American National Standards Institute's (ANSI) standard ANSI B16.33, *Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes 1/2 Through 2)*. And, you are no doubt aware that the American Society of Mechanical Engineer's standard ASME B31.8, *Gas Transmission and Distribution Piping Systems*, allows valves manufactured according to ANSI B16.33 or API 6D for use in gas service lines if the valves meet certain other requirements.

In any case, an operator installing a brass body valve would need to ensure that it complies with the rest of the regulations in § 192.145. For example, § 192.145(b)(2)(ii) requires testing of valves to 1.5 times the maximum service rating. This is a more stringent seat test than API 6D (1.5 vs. 1.1). It is not unusual for a regulation to call for compliance with a standard, but to also prescribe additional or more stringent requirements. An operator would need to specify a 1.5 times seat test in their orders to valve manufacturers to comply with the requirements of § 192.145.

In response to your specific questions:

1. Does the U.S. Department of Transportation require that natural gas meter valves meet API 6D?

OPS Response: Yes. All valves used in gas distribution and transmission systems must meet the minimum requirements, or equivalent, of standard API 6D.

2. Although API 6D has strict material composition requirements, section 382, *Composition Limits*, states that "all alternate metallic materials shall have compositions with a minimum of 50% by weight of any combination iron, nickel, or cobalt and a maximum of 0.45% by weight of carbon." Does brass meet these requirements?

OPS Response: No.

3. Are you aware of an "equivalent" standard that would allow brass as an acceptable material for natural gas meter valves?

OPS Response: Some pipeline operators have cited ANSI B16.33 as an equivalent standard for brass body service line valves. The applicability of any particular standard and its acceptability as an equivalent standard for brass body service line valves would need to be supported by the pipeline operator and reviewed by OPS and state pipeline safety inspectors on a case-by-case basis.

4. If brass is not acceptable under API 6D, and no "equivalent" standard exists, is brass an acceptable material for natural gas meter valves?

OPS Response: Brass is not banned from use on natural gas meter valves, but it is not directly addressed in either § 192.145 or in API 6D. As noted above, it is the responsibility of a pipeline operator to justify its use based on compliance with an equivalent standard.

If you have any further questions about the pipeline safety regulations, please contact me at (202) 366-4565.

Sincerely,
Richard D. Huriaux, P.E.
Manager, Regulations
Office of Pipeline Safety

Huriaux, Richard

From: Connor Deering [cdeering@muellercompany.com]
Sent: Friday, March 26, 2004 10:22 AM
To: Huriaux, Richard
Subject: Request for Formal Interpretation

Richard — it was a pleasure speaking with you the other day. After our conversation I have reviewed the information I had and would like to request a formal interpretation of several aspects related to natural gas meter valves, material requirements, and compliance with API 6D. The issues I am requesting a formal interpretation on are the following:

1. Does the United States Department of Transportation require that natural gas meter valves meet API 6D?
2. While I am aware that you do not exclusively prohibit materials, API 6D has strict material composition requirements, section 382 "Composition Limits" states

"All alternate metallic materials shall have compositions with a minimum of 50% by weight of any combination of iron, nickel, or cobalt and a maximum of 0.45% by weight of carbon", does brass meet these requirements?

3. I understand that there is an "equivalent" clause in API 6D that would give an option for alternate materials, are you aware of an "equivalent" standard that would allow brass as an acceptable material for natural gas meter valves?
4. If brass is not acceptable under API 6D, and no "equivalent" standard exists, is brass an acceptable material for natural gas meter valves?

I appreciate your time and consideration on this matter, if you have any questions please feel free to contact me at your convenience.

Best Regards,
Connor J. Deering
Mueller Co. - Gas Products Division
National Sales and Marketing Manager (800) 798-3131 x7520

September 3, 1999

Mr. R.C. Cobb
National Sales & Marketing Manager
Gas Products Division
Mueller Company
500 West Eldorado Street
P.O. Box 671
Decatur, Illinois 62525

Dear Mr. Cobb:

As your letter of September 1, 1999, notes the concept of "equivalent" as used in our regulations at. In Subpart D, § 192.143 states that each component must be able to withstand the pressure and other loadings it will encounter in gas service and that a valve must ". . . meet the minimum requirements, or equivalent, of API 6D." This means that compliance with API 6D is not necessary, but that the pipeline operator must be able to show how a valve meets an "equivalent" specification or standard.

The language you cite in API 6D, Section 3.8, *Alternate Metallic Materials*, does appear to exclude the use of brass an acceptable material. However, the term equivalent

Equivalent does not mean exactly the same, but it does mean that any equivalent standard would *need* to address all the concerns expressed in API 6D. I believe you are right that the use of brass would be a stretch, although it is not specifically excluded by the "or equivalent" language.

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One point of clarification I would appreciate has to do with the material requirements as specified in API 6D. I understand the concept of "equivalent" as you pointed out in your response. However, API 6D seem to address the issue of non-steel metals in section 3.8. "Alternate metallic Materials shall have coimpositions with a minimum of 50% by weight of any combination of iron, nickel or cobalt and a maximum of 0.45% by weight of carbon." This would appear to exclude the use of brass as an acceptable material.

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This is in response to your letter of April 29, 1999, regarding whether forged brass-body shut-off valves are acceptable in a gas meter installation valve for natural gas service. You correctly note that the gas pipeline safety regulations (49 CFR 192) make no mention of brass-body valves and that Subpart B, *Materials*, and Subpart D, *Design of pipeline Components*, do not provide clear direction on this issue.

However, the regulations do provide general direction for acceptable valves. All valves must be able to maintain the integrity of the pipeline under temperature and other environmental conditions, be chemically compatible with the gas and other materials in the pipeline with which they are in contact, and must be qualified in accordance with the applicable requirements of Subpart B. Of course, the rest of subpart B addresses only steel pipe and plastic pipe, and does not refer to brass or other materials of which a valve could be made, except to state that it must be marked with the specification to which it was manufactured. The use of brass is therefore possible under Subpart B.

In Subpart D, §19.143 states that each component must be able to withstand the pressure and other loadings it will encounter in gas service and that a valve must ". . . meet the minimum requirements, or equivalent, of

API 6D.” This means that compliance with API 6D is not necessary, but that the pipeline operator must be able to show how a valve meets and “equivalent” specification or standard.

The bottom line is that the use of forged brass-body valves for gas meter shut-off valve service is not excluded by the regulations. For that matter, neither is any other material. But, any material used must be able to meet the general serviceability requirements of Subpart B and Subpart D, which include compliance with API 6D, or an equivalent technical standard. It is up to a pipeline operator to determine what it will accept as “equivalent.”

You should be aware that the Office of Pipeline Safety cannot 'approve' or 'certify' manufactured gas pipeline components as being in compliance with the Federal pipeline safety regulations. The regulations apply only to the regulated gas transmission and distribution pipeline companies. These companies have full discretion to decide that a particular component does, or does not; comply with the Federal pipeline safety regulations. That determination can only be made by the pipeline operator after consideration of the system in which the devices are to be installed, the corrosive conditions that may exist, and other design factors. Of course, this judgment on the part of the pipeline operators is reviewable by the Federal inspectors and our state-level agents.

If we can be of further assistance in this matter, please contact me at (202) 366-4565.

Sincerely,
Richard D. Huriaux, P.E.
Manager, Regulations

Interpretation 192.145 3

December 17, 1970

Mr. William H. Alexander Project Engineer
320 Hughes Street
Houston, Texas 77011

Dear Mr. Alexander:

This is in reply to your letter of February 17, 1971, concerning the interpretation of 49 CFR, Section 192.145(a).

Published specifications do not exist for all types and sized of valves that are manufactured; however, there are certain basic safety design features that can be adapted to all these valves.

The word "equivalent" is used in the sense of providing equivalent safety. For example, the listed specifications do not cover all sizes and types of valves, but a valve of a size or type not covered should at least meet the applicable safety requirements in the listed specifications.

Thank you for your interest in the pipeline safety program.

Sincerely,

SIGNED

Joseph C. Caldwell
Director, Acting
Office of Pipeline Safety