

PI-97-0103

U.S. Department of Transportation
Research and Special Programs Administration

October 31, 1997

Mr. Paul V. Craig
Craig Company
Suite E
4260 Bankhead Highway
Lithia Springs, GA 30057

Dear Mr. Craig:

This responds to your letter of June 30, 1997, requesting clarification of a letter that we sent in 1983 regarding § 192.363. You note that § 192.363(b) states that "a soft seat valve may not be used if its ability to control the flow of gas could be adversely affected by exposure to anticipated heat." You further note that a 1983 interpretation letter sent from this office stated that "anticipated heat" refers to any possible source of heat to which a valve may be exposed, including fire that would make the valve inoperable. The primary standard that has been used to demonstrate the fire resistance of valves is 'Fire Test for Soft-Seated Ball Valves' API 607."

Your letter explains that you think that the reference to API 607 probably was used because it was the only standard at the time to demonstrate the capability of a soft seated valve in a fire, but that the standard was written for valves used at a wellhead in 1,400-1,800 degrees Fahrenheit for 30 minutes. You believe that such anticipated heat is too high for service line valves.

You state that the ASME B16 subcommittee L has discussed but not yet balloted a proposal to specify the minimum extreme temperature for these valves should be 400 degrees Fahrenheit for one hour. You further argue that the requirement for soft seats in such valves to meet the fire resistance requirements in API 607 should not be appropriate to demonstrate that the valve complies with § 192.363.

Our response to the inquiry referencing the API 607 standard was only one example of an industry standard that has been used to demonstrate the fire resistance of valves; and as you suggest, it may not be an appropriate requirement today to demonstrate that a valve complies with § 192.363. The interpretation sent in 1983 does not preclude having the operator determine the anticipated heat using other industry standards, such as the standard that is currently under development in the ASME B16 subcommittee L.

I trust that this adequately responds to your question.

Sincerely,
Richard D. Hurliaux
Director for Technology and Regulations
Office of Pipeline Safety

Craig Company
4260 Bankhead Highway, Suite E
Luthia Springs, GA 30057

June 30, 1997

Mr. Caesar de Leon
Office of Pipeline Safety
400 7th Street, S.W.
Washington, DC 20590

Dear Mr. de Leon,

I enjoyed talking with you today regarding DOT 192.363 and its interpretations, specifically, part (b) and its reference to soft seat valves. As I mentioned, I work for a valve manufacturer currently producing soft seated ball valves for this application. I also serve on ASME 8:16 subcommittee L which is in the process of updating B:16.33 to include, minimum requirements for soft seated valves.

As you know, service line valves are typically used above ground before the service regulator and meter. They enable the utility to shut-off service to the customer and also provide a means of control in the event of an emergency. The primary design of valves for this application has been tapered key plug valves. They are typically constructed of a malleable iron body with a brass key or core. Along with the metal to metal seal, grease is used to insure bubble tight shut-off. Because of the need for periodic maintenance and the industries desire for a more reliable shut-off, ball valves have been introduced with favorable results. Ball valves provide a wider operating temperature range, consistent turning torque and bubble tight shut-off in a maintenance free package.

Questions have arisen regarding whether these valves meet the minimum federal safety standards as defined in Pipeline Safety Standards Part 192.363. Subpart (b) states that *a soft seat valve may not be used if its ability to control the flow of gas could be adversely affected by exposure to anticipated heat.* "Anticipated heat" is further defined in 49 CFR Part 192 interpretations 83-6

Interpretation: *"Anticipated heat" refers to any possible source of heat to which a valve may be exposed, including fire that would make the valve inoperable. The primary standard that has been used to demonstrate the fire resistance of valves is "Fire Test for Soft-Seated Ball Valves." API 607.*

The reference to API 607 probably was used because it was the only standard available at the time to demonstrate the capability of a soft seated valve in a fire. Furthermore, this standard was written for valves used at the wellhead. The standard requires the valve to be enveloped in flame of 1400 - 1800 degrees Fahrenheit for 30 minutes. If the current, tapered key plug valve were exposed to this extreme condition it would not be operable. The melting temperature range for brass is between 1550 - 1840°F. Therefore, all the valves currently being used in this application would not pass the extreme temperature requirement of API 607. Considering the location of the valve many other problems would exist. The riser, service regulator and meter would probably be melted. The gas would have to be controlled from another point in the distribution system.

ASME B:16 subcommittee L has discussed the minimum extreme temperature requirement for these valves. While a final decision has not been reached or balloted, 400° F for one hour is the temperature the members have discussed. Because of the many standards currently being updated by the committee it could take several years to update B:16.33.

Based on the application and location of the valve, the requirement of the valve to pass API 607 should not be considered appropriate to demonstrate that the valve complies 192.363. I appreciate your consideration of this matter; please feel free to call if you have any questions.

Sincerely,
Paul V. Craig