PI-75-0107

JUN 19 1975

Mr. Ray A. Richardson
State of Colorado
The Public Utilities Commission
500 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

Dear Mr. Richardson:

This responds to your letter of June 3, 1975, concerning the pressure test required in uprating to a pressure permitted by Section 192.619(a)(2)(ii) and the leak check required by Section 192.553(a)(1).

We believe the following excerpts from a recent interpretation by this Office answer your questions:

> "Subject to the requirements of Section 192.621 or Section 192.623, as the case may be, the maximum allowable operating pressure for a pipeline may not be increased above the lowest pressure determined under Section 192.619(a). For a steel pipeline operated at 100 psig or more, in uprating under Section 192.557 to a pressure permitted by Section 192.619(a)(2)(ii), a pressure test must be performed under that Section. Steel pipelines operated at less than 100 psig may be uprated under Section 192.557 to a pressure permitted by Section 192.619(a) without conducting a pressure test. Where a pressure test is performed in up rating under Section 192.557, the standards do not specify the nature of the test. However, the provisions of Section 192.507, applicable to tests on new or replaced or relocated pipe, can serve as a guide.
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> "In conjunction with uprating, Section 192.553(a)(1) requires incremental pressure increases to be held while the pipeline is checked for leaks. This leak check may be performed by survey, and there is no minimum time specified for holding the pressure."

If we may be of further assistance, please let us know.

Sincerely,
ORIGINAL SIGNED BY
Joseph C.Caldwell
Director
Office of Pipeline Safety

State of Colorado
Department of Regulatroy Agencies
The Public Utilities Commission
500 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

June 3, 1975

Mr. Joseph C. Caldwell, Director
Office of Pipeline Safety
Department of Transportation
Washington, D.C. 20590

Dear Mr. Caldwell:

A disagreement has arisen over some Federal Code interpretations in Colorado. Considerable confusion has developed between our office and some gas operators as to understanding the Subpart K on "uprating." Your consideration and comments will be helpful.

Our primary question is regarding the top test pressure one must elevate a pipeline segment to when raising the MAOP by Uprating. Must the operator be governed by Paragraph 192.619(a)(2) safety factors (as based on class locations) in determining the highest pressure to which he goes incrementally? We cannot find any reference or comments that .619 applies or does not apply to "Uprating." For that matter we do not find any "does or does not apply" comments that the .619 factors apply to the Strength Testing Subpart J either. However, those factors are commonly accepted and used by the industry when strength testing a segment to establish new MAOP's.

EXAMPLE:
An operator wishes to raise an existing MAOP from 500psig to 700psig. May he simply raise it in four equal increments of 50 psi never exceeding 700psig as a top pressure? Or, must he calculate a top test pressure requirmment of lets say 1,000psig (depending on his class location factor from Paragraph .619(a)(2)) and then use that 1,000psig as his top pressure which will mean he has a differential of 500psi (1,000 - 500psi). The operator would then divide the 500psi into four equal increments as test points. The top test pressure of 1,000psig, would, of course, be held long enough to leak survey and make any repairs. We could then say he had qualified his line at the 700psig MAOP level, which he desired orginally. Whichever method he uses, we must assume he meets all other conditions and limitations of the uprating process such as max. hoop stresses during testing.

It is interesting to note, both methods require only four incremental steps of pressure testing.

The possible disadvantages of applying the .619 factors and requiring the higher level of top pressure are twofold. First, the operator very likely will find it more difficult and costly to impress the higher pressure upon the segment of pipeline. Furthermore, his new MAOP might be limited to something less, using this method, than he could obtain by the simpler procedure. If .619 does dictate what the top test pressure (last increment) will be, the operator might not be able to run a test pressure that high because the max. design and hoop stresses will be exceeded.

The question boils down:to does the Code intend that class location safety factors apply to all methods of testing to establish a new MAOP? We believe that to be the intention of the Code. When reading Paragraph

192.619(a) as a MAOP establishing requirement, the only exception mentioned relates to Paragraph (c).

The second question regarding Uprating involves the Code's intended method of "checking for Leaks" as referred to in Paragraph 192.553(a)(1). Is the operator obligated to test the segment at each incremental test pressure point by instrumentation such as flame ionization and/or Combustible Gas Indicator, etc.? Some operators believe they can employ a visual method, listening and watching for leaks as they walk the segment keeping close watch on the line static pressure to determine if any sudden or continual pressure drops develop.

Possibly a combination of these things is acceptable where only at the last increment of pressure will the segment be fully surveyed by instrumentation. The size, length, and location of the segment may also be factors in the prudent determination of how the testing should be accomplished, during uprating.

Will you please give our state office some comments and interpretations on these Code subjects? Your earliest response will be helpful and appreciated.

Very truly yours,
THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO
Ray A. Richardson
Gas Safety Engineer