

PI-81-0101

DATE: 25 Feb 1981

SUBJECT: ACTION: Interpretation – Section 192.311

FROM: Robert L. Paullin
Associate. Director for Operations & Enforcement, DMT-10

TO: Melvin A. Judah
Acting Associate Director for Pipeline Safety
Regulation, DMT-30

Section 192.311, a general construction requirement for transmission lines and mains, limits plastic pipe repair to the use of a patching saddle or removal. Also, Paragraph 192.13(b) requires that when a segment of pipeline is replaced, relocated, or otherwise changed, then that replacement, relocation, or change must be made in accordance with this part. With these requirements in mind, would the existing Part 192 permit the addition of a band clamp (compression fitting) on an operating pipeline to permanently repair damage or a leak (1) on a plastic transmission line or main? (2) on a plastic service line?

February 27, 1981

Mr. Keith A. Chen, P.E.
Director - Research
Wisconsin Gas Company
£26 Last Wisconsin Avenue
Milwaukee, Wisconsin 53202

Dear Mr. Chen:

Your letter to this office of February 6, 1981, concerns the use of full encirclement stainless steel band clamps for permanent repair of damaged plastic pipe. We agree with your interpretation that Subpart G of 49 CFR Part 192 (and, thus, §192.311) is only applicable during the construction of a transmission line or main. However, as further discussed below, even if the band clamp were considered a "patching saddle," as intended by §192.311 (which it is not), its use to permanently repair plastic pipe either during construction or after operation may be prohibited under §192.703(b).

In regard to the term "patching saddle" as used in §192.311, these words were added to the final rule as a result of comments to the proposed rule stating that defective plastic pipe should be permitted to be repaired. These comments clearly had in mind the use of a saddle made of material similar to that of the pipe being repaired that would be joined to the pipe by fusion, solvent cement, adhesion, or similar methods. Typical comments that prompted the Office of Pipeline Safety to permit use of a "patching saddle" were

"We feel that patching of a plastic vain should be allowed. Should be no difference between a patch over a gouge or the installation of a service tee." (Iowa Public Service Company)

"The use of solvent weld half-soles on polyvinyl chloride pipe has proven to be a safe, economical method of repair for scratches, gouges, and grooves on mains in service. (Central Telephone and Utilities Corporation) Thus, a band clamp is inconsistent with the meaning intended by "patching saddle.

Another reason why "patching saddle" does not mean a band clamp is that when §192.311 was issued, §192.281(e)(2) was also issued, requiring a rigid internal tubular stiffener to be used in conjunction with each compression type mechanical coupling. This requirement recognizes the compressive forces of the sealing gasket used in a compression coupling and the fact that plastic materials under constant stress will tend to cold flow. A full encirclement stainless steel hand clamp, like a compression coupling, subjects the plastic pipe to compressive stress but does not provide internal support for the pipe that may be needed to prevent cold flow of the plastic.

Because of the question of cold flow of plastic pipe, we believe that the safety of a permanent repair by use of a band clamp is questionable under some conditions, depending on the stiffness of the elastic pipe involved. Where unsafe conditions would result, §192.703(b) would forbid use of the band clamp as a repair method.

In your letter, you state that "Wisconsin Gas conducted tests on tile, stainless steel clamp, used as a patching saddle which determined that the performance met the required safety and serviceability tests of the code." We would appreciate your sending us these data and any other data available on the problem of cold flow of plastic pipe under continuous gasket pressure as discussed above.

Sincerely,

SIGNED

MELVIN A. JUDAH

Melvin A. Judah

Acting Associate Director for

Pipeline Safety Regulation

Materials Transportation Bureau