

**DEPARTMENT OF
TRANSPORTATION**

**MATERIALS
TRANSPORTATION BUREAU**

Office of Pipeline Safety Operations

[Docket No. 76-4W]

**MICHIGAN WISCONSIN
PIPELINE CO.**

Grant of Waiver

By a petition dated March 28, 1977, Michigan Wisconsin Pipeline Company (MWPLC) requested reconsideration of a Denial of Waiver. The original petition, dated April 9, 1976, requested a waiver from compliance with the welding requirements of §192.245 of the Federal gas pipeline safety standards (49 CFR Part 192) regarding repair of 56 defective girth welds. The request was denied by the Office of Pipeline Safety Operations (OPSO). The Denial of Waiver was published in the **FEDERAL REGISTER** (42 FR 2149) on January 10, 1977. The history and analysis of the request and OPSO's reasons for denying the request are set forth therein.

The denial was without prejudice to the petitioner's right to petition for rulemaking based on sound technical information. In its Petition for Reconsideration, MWPLC reports its evaluation of the viability of instituting a petition for rulemaking. It is MWPLC's contention that a rulemaking proceeding could not be completed within the limited time available, since the welds in question are in loops to be used to inject gas into, and withdraw gas from, storage fields in central Michigan. Gas is injected into these fields during summer months, and withdrawn in the winter months to meet market requirements. When the loops are placed in service, MWPLC's ability to transfer gas into storage will be increased by approximately 100 MMcf/d which, over a 200-day injection cycle, will result in increased storage of 20 Bcf. MWPLC states that to avoid winter curtailment of service they must have a storage balance of 153.6 Bcf above and beyond the volume injected during the summer of 1976, which can only be accomplished by placing the Michigan delivery loop in service by June 1, 1977, and there-

fore, has requested reconsideration of its waiver petition.

MWPLC further argues that several points raised in the Denial of Waiver seemed to indicate an apparent failure to communicate to OPSO all of the considerations underlying its determination to repair the welds; that OPSO concluded that ambiguities existed in MWPLC's position regarding compliance with Part 192; and that MWPLC's sole reason for not replacing the welds, once exposed, was based on relative cost.

To support its petition, MWPLC presented several arguments that had not been communicated to OPSO with the original petition. Primary among these were: First, that to cut out and replace the defective welds which had been backfilled could result in welds possessing something less than desired qualities. While 6 feet of exposed pipe is sufficient to facilitate a weld repair, substantially greater lengths of exposed pipe are required to provide the "breakover" or elastic deflections necessary to cut out a weld. Although the terrain has a pronounced influence on that length, in the case of 42" x 0.458 wall pipe, the length of exposed pipe required for a tie-in would be of the order of magnitude of 120 to 200 feet. Secondly, the process of raising the pipe and cutting out a defective weld frequently results in distortion of the cylindrical cross section of the pipe, resulting in extreme difficulties in rewelding the joint. Finally, it is obviously necessary to place substantial stress on the buried line in order to bring together the two ends of the joint such that the longitudinal alignment of the two ends is on the same axis and that the spacing between the two levels is precisely correct and is uniform for the entire circumference. This requires the ability to move one or both of the ends axially and to adjust the root space by simultaneously regulating the amount of "slack" generated in the "break-over." MWPLC asserts that given the high risk and doubtful results involved in the replacement of the buried welds as required by Section 195.245, its decision to develop and implement a procedure to repair the welds in accordance with API 1104 was appropriate at the time.

In further support of its request for reconsideration, MWPLC submitted the following documentation to support the validity of the repair proce-

dures and the safety integrity of the repaired pipeline.

1. "Consideration Underlying Development of Crack Repair Procedures Used on Michigan Wisconsin Pipeline Company's 1975 Bridg[e]man and Hamilton Loop Line Project," Jack Baker, Welding Consultant, Omaha, Nebraska.

2. Research report, "Evaluation of Repair Welding of Girth Welds in API-5LS-X-65 Pipe," D. G. Houden, Battelle Columbus Laboratories, Columbus, Ohio.

3. "Technical Report, Repair of Cracks in Weldments," Teledyne Engineering Services, Waltham, Massachusetts.

4. "Assessment of the Effect on Serviceability of 42-inch Hamilton Loop Line of Girth Weld Repair Using a Specific Procedure," Southwest Research Institute, San Antonio, Texas.

5. "Cyclic Life Investigation of Bridgeman and Hamilton Loops," Austin W. Stangel, P.E., Detroit, Michigan.

It is the policy of OPSO not to grant waivers from safety standards of general applicability unless cogent reasons are presented why a standard is inappropriate for a particular situation or why some alternative safety standard would be more appropriate in that situation. Therefore, it is incumbent upon the petitioner to show that the use of alternate methods, procedures, or application of other techniques are more appropriate than following a prescribed safety standard and will not reduce the level of safety. When a petitioner does so, it is not inconsistent with OPSO's policy to grant a waiver. These waivers are granted on a case by case basis and do not have general applicability to industry. If the alternate methods, procedures, or techniques are proven to have general applicability to industry, OPSO will consider them for future rulemaking.

After considering the arguments presented in MWPLC's Petition for Reconsideration, technical analysis of the documentation submitted in support of those arguments, review of other available relevant information and data, and consultation with the National Bureau of Standards, OPSO has determined that:

CESAR DELEON,
*Acting Director, Office of
Pipeline Safety Operations.*

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1. MWPLC has demonstrated through duration response testing that the pipeline strength and reliability would not be impaired by the repaired welds.

2. The 56 repaired girth welds do not contain any unacceptable defects.

3. The 56 repaired girth welds are acceptable according to Section 6 of API Standard 1104 (13th edition).

4. The relevant mechanical and metallurgical properties of the 56 repaired welds are equivalent to those of the original welds.

5. The hydrostatic testing of the pipeline further attested to the functional safety of the welds.

6. The repaired girth welds provide a level of safety equivalent to that required by Part 192.

7. Requiring the replacement of the welds could reasonably result in other unavoidable and possibly undetectable damage to the pipeline that could reduce the safety and integrity of the pipeline.

In consideration of the foregoing, OPSO finds that the procedures for repairing the 56 welds in question, developed by MWPLC, will maintain the integrity and reliability of the pipeline and will not lessen public safety. Further, OPSO is of the opinion that MWPLC has presented sufficient reasons why the requirement of §192.245 for removal of cracked welds should be waived. Considering MWPLC's need to increase its amount of gas in storage and the limited time in which to do it, in order to avoid curtailment of winter service, and the time involved in promulgating a new rule, OPSO is of the opinion that the granting of a waiver, instead of rulemaking, is appropriate.

Therefore, effective June 1, 1976, MWPLC's petition for Reconsideration of the Denial of Waiver is granted, and MWPLC may operate the pipelines containing the 56 welds for which a waiver was sought without removal of the welds as required by §192.245.

(Sec. 3, Pub. L. 90-481, 82 Stat. 721, 49 U.S.C. 1672, 40 FR 43901, 49 CFR 1.53.)

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