2. On page 439, third column, § 48.4091-2(b)(2)(iii), fourth line "renovate" should read "renovated".

3. On page 440, first column, § 48.4091-3(a)(2), thirteenth line, "us" should read "use" and insert "and" after "cutting"; third column, § 48.4091-4(b)(1), last paragraph of "Exemption Certificate", fourth line, insert the following after "of": "not more than $10,000, or imprisonment for".

BILLING CODE 1505-01-M

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 192 and 195

[Docket PS-74; Notice 1]

Transportation of Gas or Hazardous Liquids by Pipeline; Repair or Removal of Girth Weld Defects

AGENCY: Materials Transportation Bureau (MTB), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes to amend the pipeline construction requirements of Parts 192 and 195 by replacing the present regulations on the repair or removal of defective girth welds with performance standards for weld repair, and incorporating by reference the procedural requirements of Section 7.0 of API Standard 1104 in recognition of an American Petroleum Institute (API) June 1981 petition. The proposed requirements would permit the repair of weld cracks as well as multiple repairs of other weld defects under controlled conditions in a more cost effective manner and assure that the soundness and mechanical properties of a repaired weld will be equal to an acceptable new weld.

DATE: Interested persons are invited to submit written comments on this proposal. All comments must be filed by March 10, 1983. Late filed comments will be considered so far as practicable. Interested persons should submit as part of their written comments all the material that is considered relevant to any statement of fact or argument made.

ADDRESS: Communications should be sent to the Dockets Branch, Room 8426, Materials Transportation Bureau, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, D.C. 20590, and identify the docket and notice numbers.

FOR FURTHER INFORMATION CONTACT: William A. Gloe, (202) 426-2082.

SUPPLEMENTARY INFORMATION

Background

Weld repair requirements of Parts 192 and 195 were derived from industry standards that were in effect at the time of issuance of the Federal pipeline safety regulations, and were based on concepts that safety would be adversely affected by certain types of weld repair, particularly the repair of cracks and multiple repair of other defects. The American National Standards Institute (ANSI) B31.8 standard was generally followed as a guide for the gas regulations, and B31.4 for the liquid regulations. The applicable sections of the DOT regulations are § 192.245, "Repair or Removal of Defects," § 195.230, "Welds: Repair of Defects," and § 192.232, "Welds: Removal of Defects."

Changes made in the industry standards since 1970 have resulted in differences from the present DOT regulations with regard to limitations on the repair of cracks and whether or not multiple repair of defects may be made. API Standard 1104, referenced by ANSI B31.4 for weld repair, was revised in 1973 to permit operators to develop and follow procedures for the repair of girth weld cracks and for multiple repair that are not permitted by the DOT regulations. The API 1104 Committee has indicated that the reason for the addition of repair provisions was to adapt the standard to pipeline and other piping construction where the repair of cracks and multiple repair might be appropriate, or where repair may be preferable to cutting out of a section of pipe containing the defective weld and welding in a new short section. ANSI B31.8 was revised in 1975 to incorporate the weld repair provisions of the 1973 edition of API 1104, such that ANSI B31.8 and ANSI B31.4 are now consistent. The DOT regulations are now much more restrictive than the industry standards.

Currently, § 192.245, governing the repair and removal of defects, specifies that a weld must be removed if it has a crack that is more than 2 inches long or that penetrates either the root or second bead, and adds that if a repair is not acceptable, the weld must be removed. However, the rule provides an exception that additional repairs made in accordance with qualified procedures are permitted for offshore pipelines being installed from a pipelay vessel. Section 195.230 specifies that an unacceptable weld may not be repaired unless there are no cracks in the weld and the segment of the weld was not previously repaired, but makes a similar exception to § 192.245 for offshore pipelines being installed from a pipelay vessel. Section 195.232 provides that a cylinder of the pipe containing the weld must be removed whenever the weld contains one or more cracks or the weld was repaired but did not meet the standards of acceptability.

Under the provisions of the President's Executive Order 12291, the MTB has performed a regulatory review of the girth weld repair sections of Parts 192 and 195. That review of the MTB technical and pipeline accident information, including waiver petitions and resulting MTB actions, has shown that the present requirements are overly stringent and costly. Documented estimates of cost savings over the past 6 years as a result of waiving the repair limitations for four pipeline operators have been more than 16 million dollars. It is not known how many other pipeline construction projects have been, or would be, affected adversely by these weld repair limitations in the future, although it is believed that the number is substantial. MTB accordingly proposes the adoption of the requirements of Section 7.0 of API 1104 (15th edition, 1980) with further supporting and definitive performance language to assure a sound, ductile weld when repair is completed.

American Petroleum Institute Petition

On June 2, 1981, the API petitioned on behalf of the API-AGA Joint Committee on Oil and Gas Pipeline Field Welding Practices to replace the relevant sections of Parts 192 and 195 with the following: "Repair or Removal of Defects: Each weld that is found unacceptable under (§ 192.241(c) or § 195.228(b)) must be removed or repaired. Repairs must meet the requirements of Section 7.0, 'Repair or Removal of Defects' of API Standard 1104." Section 7.0 of API Standard 1104 (15th edition, 1980) is quoted in its entirety as follows:

Section 7.0, Repair or Removal of Defects

7.1 Authorization for Repair of Defects Except Cracks

Defects, except cracks, in the root and filler beads may be repaired with prior company authorization. Defects, except cracks, in the cover pass may be repaired without prior company authorization. When repairs are made in a previously repaired area, a procedure similar to that for the repair of cracks shall be used (Paragraph 7.4). All repairs must meet the Standards of Acceptability—Nondestructive Testing, Section 6.0 of this standard.

7.2 Removal and Preparation for Repair of Defects

Before repairs are made, injurious defects shall be entirely removed to sound metal. All slag and scale shall be removed. Preheating may be required by the company.

7.3 Testing of Repairs

Repaired areas shall be re-radiographed, or inspected by the same means previously used.

The company may, if it chooses, reinspect all of a weld containing a repair in the same manner as it is allowed to inspect any production weld (Par. 5.1. and 5.2).

7.4 Authorization and Procedure For Repair of Cracks

Cracked welds shall be removed from the line unless a repair is authorized by the company. Such weld cracks may be repaired provided:

a. The crack is less than 8 percent of the weld length.

b. A complete repair procedure has been developed and documented. The repair procedure shall include:

(i) Method of exploration of the crack area.

(ii) Method of crack removal.

(iii) Preheat and interpass heat requirements.

(iv) Welding procedure and type of electrodes.

(v) Interpass nondestructive inspection requirements.

(vi) Postheat treatment.

c. The repair is made under the supervision of a technician experienced in repair welding techniques.

d. The weld is made by a qualified welder.

e. The repair groove is examined by a magnetic particle or dye penetrant test to assure complete removal of the crack.

The regulation changes for which API petitions would overcome objections to the current weld repair regulations by permitting the repair of cracks and the multiple repair of weld defects, but add a crack length limitation of 8 percent of the weld length and are not definitive with regard to the required properties of the weld after repair is completed. MTB does not have data that would support the 8 percent limitation, other than informal information from the API 1104 Committee that this limit is consistent with other provisions of the workmanship standards for weld defects. The central issue as to whether Section 7.0 of API 1104 may be considered adequate for weld repair (of cracks and for multiple repairs) is whether or not the procedures assure the soundness and mechanical properties equivalent to an acceptable welded joint. Since Section 7.0 only cites in 7.4.a(iv) the welding procedure and type of electrodes as a control (which may or may not be effectively applied), MTB believes it is necessary to state the objective of Section 7 in performance terms. This is simply that the repair procedure must assure that the same minimum requirements for soundness and mechnanical properties as specified for the original weld will be met after completion of the repair.

The API petition transmittal letter also states that "Compliance [with the present DOT regulations] has proven impossible where fittings, valves, and flanges are involved since there is no pipe to be cut out on one side of the weld." Curiously, Section 7.0 of API 1104 makes no exemption for welds at fittings other than for application of the 8 percent limit for crack repair. It may be implied that weld cracks have not occurred at fittings that are more than 8 percent of the weld length, or that if the cracks were longer, the fitting should be removed from the line. A more plausible interpretation is that the phrase "Cracked welds shall be removed from the line" means that the weld only shall be removed, permitting the use of air-arc gouging and grinding or other similar technique to avoid grossly enlarging the weld groove. It is not clear, in this regard, as to what practical purpose the 8 percent limit serves. Nevertheless, MTB seeks comment as to the need in the Federal regulations for a specific limit on a crack length that may be repaired, assuming that all of the other provisions of Section 7.0 of API 1104 would be followed in making the repair.

The API letter petition is available in the docket for this proceeding for review and copying by interested persons.

Clarification of Removal of Welds

As stated above, Part 192 now specifies the conditions under which an unacceptable weld must be "removed," but does not otherwise expressly regulate the extent or process of removal. Part 195 specifies, in contrast, that when a weld is to be "removed," a cylinder of the pipe containing the weld must be removed. The conditions requiring removal are that (a) a first weld repair has been found unacceptable or (b) the weld contains unrepairable cracks. Because of the difference in definition between the gas and liquid regulations and the questionable effect of requiring that a section of pipe on each side of the weld be removed, MTB finds it necessary to further consider the meaning of the term "removed" in the proposed rule.

Section 7.0 of API 1104 requires that cracked welds shall be removed from the line unless a repair is authorized by the company. MTB considers that further definition or restriction of weld removal as in Part 195 is not needed since if an entire new weld is made as other than a repair, the requirements of the original welding procedure, including all essential variables, would apply to assure a quality weld. In either case, if Section 7.0 is applicable, MTB considers that the established provisions for both the welding qualification procedure and the repair procedure (along with supplemental visual inspection and nondestructive testing) are adequate to assure quality pipeline welding. MTB believes that retention of the specific requirement for the method of removal of a defective weld would add no safety benefit and is unnecessary.

Multiple Repairs

As previously stated, multiple repairs of weld defects, or more than one repair of a single weld defect, have not been permitted by the DOT pipeline safety regulations for onshore pipelines, this prohibition having been derived from pre-1970 industry consensus standards for pipeline welding. Since that time, the industry has developed and implemented procedures that have been successfully applied in the performance of pipeline weld repair. The API asserted in its 1981 petition that a compelling reason to allow multiple repairs of weld defects in onshore pipelines is that multiple repairs are now permitted in the construction of offshore pipelines. There is merit in this assertion because the stress of laying offshore pipelines from lay barges is more severe than that encountered in the construction of onshore pipelines, and no failures have been reported to DOT in the past 10 years of offshore pipeline construction due to multiple repairs of weld defects.

A waiver petition submitted by the Louisiana Offshore Oil Port Authority (LOOP) for 105 platform piping welds that had each been repaired more than once (up to seven times) provided fracture toughness test data to show that toughness of the welded joint was not impaired or degraded by multiple repairs of the same defect in up to six repairs. Though fracture toughness as determined by the Charpy "V" notch impact test was slightly degraded in one segment of the weld repaired seven or more times, it was strongly suggested by the supporting documentation that if the procedures of Section 7.0 of API 1104 had been followed with respect to

verification of complete removal of the defect prior to weld repair, the number of repairs would not have been necessary.

As of this date, MTB has no data that would suggest that a hazardous condition may be created by the allowance of multiple repairs of girth weld defects in accordance with the procedures of Section 7.0 of API 1104. However, commenters are requested to provide any data that may be available on adverse effects of multiple repair welding, particularly on higher strength grades of steel line pipe that may require precautionary provisions for satisfactory repair that may not now be contained in Section 7.0.

Discontinuation of Weld Repair Regulation

During the MTB regulatory review, consideration was given to other alternatives, including the deletion of all weld repair or removal requirements from the regulations on the basis that the other sections of the regulations on welding would still require qualified welding procedures and qualified welders, and would be applicable to repair welding. The basic determining factor as to whether a specific weld repair regulation was necessary then became an assessment of the extent of the problem.

In the absence of more specific information, the failure of girth welds identified on reports to DOT (due to any cause) was reviewed to provide an indication of the degree of hazard that may exist. From DOT pipeline accident records, it was found that for the past 7 years, there has been an annual average of 30 reportable failures in gas transmission lines and an average of from three to four reportable failures in hazardous liquid pipelines. Many more girth weld failures are shown as "nonreportable" leaks on gas annual report form totals. "Nonreportable" leaks in hazardous liquid lines are not available because liquid line operators are not required to submit annual reports.

While acknowledging that historical accident data may not be representative of present-day welding and inspection techology, further review was made of DOT data as published by the industry. In an American Gas Association (AGA) report published as NG-18 Report No. 106, the AGA summarized all incidents for the 6-year period from 1970 through 1975, showing girth weld failures as 6.2 percent of the total number of incidents. An "incident" is defined by the AGA report as a failure that requires a written report to be submitted in accordance with § 191.15 of 49 CFR Part 191, "Transmission and gathering systems: Leak report." The total number of incidents shown in the AGA report for the 6-year period was 2,459, which at a 6.2 percent rate would be approximately 25 girth weld failures per year. The report states that for all transmission and gathering incidents during the 6-year period "the number of deaths per year has averaged less than four, while the number of injuries per year for the same period has averaged 22."

Other information reviewed included Advisory Bulletins published by the MTB, including National Transportation Safety Board (NTSB) reports cited therein. The following information is excerpted from Advisory Bulletin No. 73-12 for December 1973:

> In an NTSB report on a natural gas liquids fire near Austin, Texas, in which six persons died and two were critically burned, the probable cause ws stated to be due to improper pipeline repair welding procedures. NTSB made several recommendations, among which was the recommendation that OPS (now OPSR) should "incorporate into 49 CFR Part 195 specifications for pipeline repair welding procedures designed to avoid stress concentration." The NTSB report number is: NTSB-PAR-73-4. Single copies of NTSB reports may be obtained by writing the Publications Branch, NTSB, Washington, D.C. 20594.

In Advisory Bulletin No. 77-2 for February 1977, the following information is given for a crude oil pipeline accident:

> In an NTSB investigation of a crude oil pipeline accident near Abilene, Texas, in which six men died, it was determined that the probable cause was the attempted repair of "a leak in a cracked fillet weld on a full-wrap repair sleeve" and that the cracked fillet weld was made improperly during the repair of an earlier leak." The NTSB report number is: NTSB-PAR-76-4.

While it is not clear from review of accident report data as to the exact nature of the causal factors, it does become evident that the number of human casualties from one accident resulting from an improper weld repaid can be high. What part of the number of other girth weld failures may be attributed to improper weld repair cannot be known with certainty unless the accident is described in an investigative report, such as an NTSB report. DOT report forms do not contain specific entry blanks for failure due to weld repair.

From a review of the above information, MTB has concluded that a justification does not exist for the discontinuation of weld repair regulation. Facts as above indicate that more effective regulation is needed to avoid a potentially hazardous condition, while at the same time, reducing the cost of pipeline construction.

Girth Weld Repair Waiver History

Waivers from the requirements of §§ 192.245, 195.230, and 195.232 granted by MTB since 1975 have resulted in estimated total cost savings of a minimum of 16 million dollars and have materially assisted in meeting scheduled completion dates for several major pipeline construction projects. Waivers from these requirements have been granted by the DOT for the Alyeska Pipeline Service Company (42 FR 29983, June 9, 1977), the Michigan Wisconsin Pipe Line Company (42 FR 33406, June 30, 1977), LOOP Inc. (46 FR 22306, April 16, 1981), and the Northern Border Pipeline Company (47 FR 20715, May 13, 1982). The waiver petitions had several features in common: (1) They were all for major projects and large diameter pipe (to 48 inches for the Trans-Alaska Pipeline System), Stressing the high cost and adverse schedule effects of replacement versus repair; (2) All waivers recognized the importance of completely documented weld repair procedures; (3) All stated the importance of demonstrating the mechanical properties of the repaired welds as a part of the procedures; (4) All stressed fracture toughness and other special mechanical testing to anticipate and satisfy pipeline design criteria, such as possible permanent strain and fatigue; and (5) Two emphasized the impossibility of removing welds adjacent to, or between fittings, necessitating repair rather than removal. This waiver chronology typifies the scope of the problem and corrective actions, and strongly suggests the need for an amendment utilizing performance standards, along with Section 7.0 of API 1104, as a part of the revised Federal pipeline safety regulations for repair or removal of welds.

MTB believes that the data obtained in processing of these waivers provides valuable basic criteria guidance for revision of the regulations. Waiver petitions listed above, accompanying data, and grants of waivers are also on file in the Dockets Branch for the review of interested persons.

Epilogue.

The MTB has determined that this document does not require a full draft evaluation since the proposal has a minimal impact on the industry and is favorably responsive to a petition for amendment of the regulations by the API as the representative industry consensus standards organization. Also, since the proposed rule would have a

positive effect on the economy of less than $100 million a year, would result in a cost savings to consumers, industry, and government, and no adverse effects are anticipated, this action is not "major" under Executive Order 12291 or "significant" under DOT procedures.

Because MTB has only limited cost data relating to four weld repair waiver actions, additional cost data is now sought from the public and the industry about the resulting effect of amending the regulations as proposed.

List of Subjects

49 CFR Part 192

Pipeline.

49 CFR Part 195

Ammonia, Petroleum, Pipeline safety, Reporting and recordkeeping requirements.

Proposed Rule

Based on the foregoing, MTB proposes that Title 49, Code of Federal Regulations, Parts 192 and 195, be amended as follows:

PART 192—[AMENDED]

(1) By revising § 192.245 to read:

§ 192.245 Removal or repair of defective welds.

Each weld that is unacceptable under Section 192.241(c) must be removed, or repaired as follows:

(a) The repair of weld defects and the testing of weld repairs shall be in accordance with the requirements of Section 7.0 of API Standard 1104 and assure a sound, ductile weld when repair is completed.

(b) Multiple repairs, in accordance with subparagraph (a), may be made provided that the weld repair procedures assure that the minimum mechanical properties specified in the welding procedure for the original weld are met upon completion of the final weld repair.

PART 195—[AMENDED]

§ 195.232 [Removed]

(2) By removing § 195.232 and by revising § 195.230 to read:

§ 195.230 Welds: Repair of defects.

Each weld that is unacceptable under Section 195.228 must be removed, or repaired as follows:

(a) The repair of weld defects and the testing of weld repairs shall be in accordance with the requirements of Section 7.0 of API Standard 1104 and assure a sound, ductile weld when repair is completed.

(b) Multiple repairs, in accordance with subparagraph (a), may be made provided that the weld repair procedures assure that the minimum mechanical properties specified in the welding procedure for the original weld are met upon completion of the final weld repair.

(Authoriy citation for Part 192 is: 49 U.S.C. 1672; 49 U.S.C. 1804; 49 CFR 1.53; Appendix A to Part 1, and Appendix A to Part 106)

(Authority citation for Part 195 is: 49 U.S.C. 2002; 49 CFR 1.53; Appendix A to Part 1; and Appendix A to Part 106)

Issued in Washington, D.C., on January 19, 1983.

Richard L. Beam,

Associate Director for Pipeline Safety Regulation, Materials Transportation Bureau.

[FR Doc. 83-1843 Filed 1-21-83; 8:45 am]

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49 CFR Parts 192 and 195

[Docket No. PS-69; Notice 2]

Transportation of Natural and Other Gas and Hazardous Liquids by Pipelines; Line Marking at Navigable Waterways

AGENCY: Materials Transportation Bureau (MTB), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: By this notice, MTB proposes to revoke the regulations that require pipeline operators to place and maintain line markers at locations where gas and hazardous liquid pipelines cross navigable waterways. The current regulations are considered costly and unnecessary for safety in light of requirements and practices of the U.S. Army Corps of Engineers.

DATE: Interested persons are invited to submit written comments on this notice before March 10, 1983. Late filed comments will be considered as far as practicable. All interested persons must submit as part of their written comments all the material that they consider relevant to any statement of fact made by them.

ADDRESS: Communications should be sent to the Dockets Branch, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590. All comments and docket materials may be reviewed in the Dockets Branch, Room 8426, between the hours of 8:30 a.m. to 5:00 p.m. each working day.

FOR FURTHER INFORMATION CONTACT: Mr. L. M. Furrow, 202-426-2392, regarding the content of this notice, or the Dockets Branch, 202-426-3148, regarding copies of this notice or other information in the dockets.

SUPPLEMENTARY INFORMATION:

Background

Line markers (or signs) historically have been installed by gas and hazardous liquid pipeline companies at navigable waterway crossings to warn vessel pilots of the presence of underwater pipelines. The objective of this practice is to reduce the possibility that underwater pipelines will be damaged by activities such as anchoring, dredging, pile driving, spud mooring, or by collision at the shoreline. A version of this voluntary practice became mandatory for hazardous liquid pipelines when § 195.410, Line markers, was adopted in 1970 (34 FR 15473). Later, the standards in § 192.707 for marking gas pipelines were amended in 1975 (40 FR 13502) to, among other things, establish specific, detailed requirements for marking mains and transmission lines at navigable waterway crossings.

Although the term "navigable waterway" is not defined in either the gas or liquid regulations, MTB has interpreted it in a manner consistent with the U.S. Coast Guard's application of the term. This application has been recently expanded, however, by statutes and court decisions to include waters where there is little or no likelihood that marine activities will damage pipelines. For instance, markers would not be very useful for protecting crossings of minor streams that, although "navigable," have no vessel traffic and no likelihood of being dredged.

Another problem with both the gas and liquid line marking regulations is the difficulty and impracticality of installing warning signs at the shore that are large enough to be seen from passing vessels. Usually as waterways increase in size, so must the signs to provide adequate notice. At some point, aesthetic objections occur.

These problems caused MTB to include §§ 192.707 and 195.410 in its program for reviewing existing regulations, with a view toward revoking or revising these regulations that are not achieving their intended purpose. Key considerations in the review regarding line marking at navigable waterways were: (1) The seriousness of the safety problem the regulations were intended to remedy, (2) the burdens imposed by the regulations, and (3) duplication of the regulations with requirements of another agency.

At the outset of the review, MTB brought the question of the need for line markers at navigable waterways before