

Hazard class (material)	Placard adopted under docket No. HM-103/112	Equivalent placard required by pt. 174 on June 30, 1976
Explosives A.....	EXPLOSIVES A.....	EXPLOSIVES.
Explosives B.....	EXPLOSIVES B.....	DANGEROUS.
Explosives C.....	FLAMMABLE.....	None.
Flammable liquid.....	FLAMMABLE.....	DANGEROUS.
Flammable solid.....	FLAMMABLE SOLID.....	DANGEROUS.
Oxidizer.....	OXIDIZER.....	DANGEROUS.
Corrosive liquid.....	CORROSIVE.....	DANGEROUS.
Nonflammable gas.....	NONFLAMMABLE GAS.....	DANGEROUS.
Flammable gas.....	FLAMMABLE GAS.....	DANGEROUS.
Poison A.....	POISON GAS.....	POISON GAS.
Poison B.....	POISON.....	DANGEROUS.
Radioactive material.....	RADIOACTIVE.....	DANGEROUS—RADIOACTIVE
Organic peroxide.....	ORGANIC PEROXIDE.....	MATERIAL.
Combustible.....	COMBUSTIBLE.....	DANGEROUS.
(Chlorine).....	CHLORINE.....	DANGEROUS.
(Oxygen, pressurized liquid).....	OXYGEN.....	DANGEROUS.

(7) This amendment does not terminate any outstanding exemption issued under 49 CFR, Part 107 or its predecessor authorities. Any exemption from a regulatory requirement in effect on June 30, 1976, which is modified or replaced by this amendment, continues in effect:

(1) By its own terms, to the extent that continued compliance with that regulatory requirement is required or authorized by this amendment; and

(11) For any provision of this amendment which is equivalent to that regulatory requirement.

(18 U.S.C. 834, 46 U.S.C. 170(7), 49 U.S.C. 1472(h) (1), 49 CFR 1.53(f)-(h))

Issued in Washington, D.C., on June 1, 1976.

JAMES T. CURTIS, Jr.,  
Director, Materials  
Transportation Bureau.

[FR Doc.76-18345 Filed 6-21-76;2:55 pm]

[Docket No. OPS-23; Amdts. 192-26, 195-10]

## PART 192—TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE; MINIMUM FEDERAL SAFETY STANDARDS

### PART 195—TRANSPORTATION OF LIQUIDS BY PIPELINE

#### Bending Limitations

This amendment modifies § 192.313 of the Federal gas pipeline safety standards and § 195.212 of the Federal liquid pipeline safety standards to provide more appropriate safety requirements for steel pipe which is subjected to field bending. This amendment also makes the standards for bending pipe in gas and liquid service consistent insofar as practicable. In addition, the existing restrictions on wrinkle bends and mitered bends in § 195.212(e) are restated in a new § 195.212(a) and § 195.216, respectively.

This proceeding was begun by the Office of Pipeline Safety (OPS) which issued an advance notice of proposed rulemaking, Notice 73-1 (38 FR 14969, June 7, 1973), to gain additional information on pipe bending before formulating proposed amendments to the existing rules. (However, after the advance notice was issued, OPS was abolished, and the authority to administer pipeline safety matters was delegated to the Director, Materials Transportation Bureau (MTB) (40 FR 30821, July 23, 1975).

After reviewing the comments to Notice 73-1, MTB issued Notice 75-7 (40 FR 60076, December 31, 1975), proposing various amendments to the pipe bending standards in §§ 192.313 and 195.212. Interested persons were invited to submit written data, views, or arguments by February 16, 1976.

There were 17 persons who submitted written comments to Notice 75-7; eight natural gas pipeline companies, three gas and petroleum trade associations, two industry committees on safety practices, two pipeline contractors, one state regulatory commission, and one equipment manufacturer. Nine of the 17 commenters favored all the proposed amendments. A discussion of the significant comments which suggests that the proposed amendments be changed and the disposition of those comments in developing the final rules is discussed hereinafter. Comments which suggested rule changes outside the scope of Notice 75-7 are not discussed but may be considered by MTB in any future rulemaking proceeding on pipe bending.

**Maximum Allowable Deflection.**—For steel gas pipe 12 inches or more in diameter that is subjected to field bending, the existing § 192.313(a) (3) prescribes a maximum deflection limit of 1½ degrees per length of pipe equal to the diameter. Part 195 does not have a comparable requirement. In recent years, however, industry has used (1) the internal bending mandrel to make field bends and (2) for offshore installations, the technique of reeling and unreeling pipe on a lay barge. In both cases industry has achieved without adverse safety consequences, larger field bends than would be permitted if § 192.313(a) (3) were applicable. In view of these technological advances and the performance standards which §§ 192.313 and 195.212 prescribe for the safety of field bends, MTB proposed that the maximum deflection limit in § 192.313(a) (3) be deleted.

Most of the comments in response to this proposal state that the numerical limit on the degree of bend should be eliminated because the development of the internal bending mandrel makes the limitation unnecessary. However, one commenter suggested that the deflection limit should be 3 degrees per length of pipe equal to the diameter, and an internal mandrel should be required during the bending of pipe 12 inches in diameter

and larger. This commenter indicated that caution should be exercised in relaxing the existing limitation because the total level of stresses induced by bending, hydrostatic testing, and pressure reversals during normal operation is uncertain, particularly on high strength pipe. The commenter further argued that these stresses in combination with temperature stresses appear to create an even greater failure potential for pipe constructed in cold climates.

MTB recognizes that pipe in a bend section is subjected to a number of different stresses. However, as discussed in Notice 75-7, the available information indicates that the performance standards existing in the bending regulations and other safety requirements concerning pipe design provide ample safeguards against material failure due to those stresses. Likewise, MTB believes that with adequate performance standards for a safe bend, it is not necessary for the safety standards to mandate that a bending mandrel be used during bending. While a bending mandrel facilitates compliance with the performance standards, new methods may be developed which also enable meeting the standards.

Another commenter suggested that MTB adopt the bending limitation contained in §§ 406.2.1(b) and 406.2.1(c) of the 1974 edition of the American National Standards Institute (ANSI) B31.4 Code. These Sections provide that deflection should be limited to a certain radius of bend depending on pipe diameter or to a lesser radius if qualifying tests bends are performed. This commenter also stated that test bends are desirable to determine whether performance standards are met and whether the pipe wall thickness after bending is less than the minimum thickness permitted by the pipe manufacturing specification referenced in § 192.55. Wall-thinning and the need for test bends were discussed in Notice 75-7. MTB concluded in that Notice that the existing performance standards provide for safe bends even if a test bend is not made, and that wall-thinning is not a problem in bends which conform to those standards. There was no new information submitted as a result of the Notice which would cause MTB to reach a different conclusion.

MTB is convinced, based on the comments, and all available information that the performance requirements alone are sufficient to provide for the structural integrity of pipe that is field bent. As a result, the numerical limit on bending in the existing § 192.313(a) (3) is deleted.

**Nondestructive Testing.**—The existing § 192.313(b) requires that circumferential welds in bend sections subjected to stress during bending be tested nondestructively. Recognizing that all welds in bend sections are subjected to some stress during bending, MTB proposed that the rule be clarified to apply only to welds in the immediate area of bending. A majority of commenters favored this proposal. Therefore, § 192.313(b) is amended to require nondestructive testing of circumferential welds located

where the stress during bending causes a permanent deformation in the pipe.

MTB further proposed that § 192.313 (b) be amended to clarify that the required nondestructive testing may be conducted either before or after bending. The majority of commenters agreed that the purpose of nondestructively testing welds is to detect flaws, and that this purpose could be accomplished before or after bending. Two commenters suggested, however, that nondestructive testing should be performed only after bending in order to detect a flaw which, although acceptable under API Standard 1104 (§§ 192.291 and 195.228), might grow during bending and subsequently cause a pipeline failure. MTB recognizes that some minute flaws in acceptable welds may grow during the bending process, but even so, the record does not contain evidence that this flaw growth has resulted in unacceptable welds. Rather, test data submitted in response to Notice 75-1 shows that acceptable welds were not made unacceptable by bending. In addition, industry experience with reeling and unreeling pipe, where nondestructive testing is performed before reeling, indicates that prior testing is a satisfactory safety practice since there have not been any reported failures due to defective welds. Therefore, MTB has concluded that the likelihood that minute flaws in acceptable welds will grow during bending is not a significant enough safety problem to require that testing be performed after bending. Accordingly, § 192.313(b) is further amended to provide operators the option of nondestructively testing circumferential welds in bent sections either before or after bending.

In light of the safety benefits from nondestructively testing a circumferential weld subjected to bending and the current industry practice, it was proposed in Notice 75-7 that the pipe bending regulations for liquid pipelines be amended to contain the identical testing requirement as § 192.313 imposes on gas pipelines. There were no adverse comments to this proposal. Therefore § 195.212(c) is established to require that "each circumferential weld (in field bent steel pipe) which is located where the stress during bending causes a permanent deformation in the pipe must be non-destructively tested either before or after the bending process."

**Mechanical Damage.**—In Notice 75-7, MTB proposed that the existing prohibition against mechanical damage in § 192.313(d) be restated using the terms of § 195.212 to specifically prohibit the types of mechanical damage known as "buckling" and "cracks." There were no adverse comments to this proposal. Therefore, § 192.313(d) is restated as proposed and redesignated as § 192.313 (a) (3).

**Ovality.**—For pipe more than 4 inches in nominal diameter, § 192.313(a) (4) provides a numerical restriction on ovality due to bending. The liquid pipeline bending regulations do not contain a similar requirement. Because the ovality restriction limits wall thinning and ex-

cessive strain due to bending, MTB proposed that § 195.212 be amended to include the ovality limitation now existing in § 192.313(a) (4). This proposal resulted in a considerable amount of negative comment. Commenters pointed out that the proposed ovality requirement is twice as restrictive as the current industry practice and more stringent than the ovality limitation in pipe manufacturing specifications. In the latter case, if the proposal were adopted, pipe from a manufacturer could exceed the ovality restriction before being bent. Another commenter pointed out that liquid pipeline carriers have not filed with the Department any reports of failures caused by bends with excessive ovality.

Based on all the comments to Notice 75-7, MTB now believes that a numerical restriction on ovality is not necessary to provide for the safety of a steel pipeline subjected to field bending. Rather, MTB believes that the performance standards involving smoothness, mechanical damage, and serviceability are sufficient to protect against material damage due to bending. In effect, these standards also limit ovality because excessive ovality would impair the serviceability of a pipeline or cause mechanical damage. It further appears that the ovality restriction now existing in § 192.313(a) (4) is derived from a provision of the 1968 addition of the ANSI B31.8 Code which was based on an operating consideration, e.g., passage of internal cleaning and inspection equipment, rather than a strength of materials consideration. Consequently, the proposed ovality amendment to § 195.212 is not adopted.

In addition, MTB intends to propose in a future notice of proposed rulemaking that the ovality restriction in § 192.313 be deleted. The existing rule cannot be changed in this proceeding because deletion was not proposed in Notice 75-7. Meanwhile, the ovality restriction of the existing § 192.313(a) (4) remains in effect and is redesignated as § 192.313(a) (2).

**(2). Serviceability.**—The requirement of the existing § 192.313(a) (1) that a bend may not impair the serviceability of the pipe was proposed to be added to § 195.212 as necessary to provide for continued safe bends. There were no adverse comments to this proposal. The requirement is particularly meaningful in the absence of an ovality restriction. If, for instance, a pipeline is so out-of-round that it prevents the passage of cleaning scrapers and other equipment necessary for safe operation of the pipeline, the pipeline's serviceability would be impaired. For these reasons, the proposed serviceability requirement is adopted without change as § 195.212(b) (1).

**Effect of bending shoe on girth weld.**—MTB proposed to revoke the existing requirement in § 195.212(d) which prohibits the placement of a girth weld inside a shoe of a bending machine when the weld protrudes above the outer wall of the pipe. This requirement is intended to reduce the strain in girth welds during bending, but creates problems in bending 80-foot lengths of pipe when the girth weld in the pipe is to pass through

a bending shoe. The single comment received on this proposal suggests that rather than revoking the requirement, an exception be provided for bending shoes lined with a material which minimizes stress concentration at the weld. While this comment has merit, MTB believes that a requirement for a proper liner is unnecessary in light of the existing industry practice of using a liner to protect the weld. Also, if a liner were not used, mechanical damage would be likely to result, and § 195.212 now prohibits mechanical damage in bend sections. Because available information indicates there have been no adverse consequences from placing welds inside a bending shoe, MTB has decided that the requirement should be revoked as proposed.

**Conformity of bend to ditch.**—The existing requirement of § 195.212(b) that bent pipe conform to the profile of the completed ditch is revoked as proposed in Notice 75-7. No adverse comments were received in response to the proposal.

**Miter joints.**—MTB proposed in Notice 75-7 that the existing prohibition in § 195.212(c) against mitered bends (not including deflections up to 3 degrees that are caused by misalignment) be restated in a new § 195.216. This proposal was made because mitered bends are made by welding, not by a bending process. Commenters pointed out, however, that if adopted as restated in the Notice, the rule would not distinguish between a true miter joint and the deflection at a welded joint due to misalignment, thus permitting a miter joint of up to 3 degrees. MTB concurs with this comment, and the final rule continues the distinction in the existing rule between a mitered bend and a deflection due to misalignment.

**Offshore pipelines.**—MTB proposed in Notice 75-7 that if the proposed amendments to §§ 192.313 and 195.212 are adopted, they are to apply to any offshore gathering lines which may become subject to regulation as a result of proceedings commenced by Notice 75-4 (40 FR 43740, September 23, 1975) for liquid pipelines and Notice 75-5 (40 FR 45192, October 1, 1975) for gas pipelines. One commenter favored the proposal. Another objected, declaring that the impact of bending rules on offshore gathering lines could not be evaluated because the limits of MTB's proposed exercise of jurisdiction over those lines is unclear. MTB does not agree with this comment because of the nature of the proposed amendments. Except for the proposed ovality restriction on liquid pipelines, which has not been adopted, the proposed amendments and rules to which they relate are substantially the same as the current ordinary and prudent industry safety practices used in pipe bending offshore. The amendments adopted herein will, therefore, apply to all offshore pipelines under the jurisdiction of Parts 192 and 195, including any gathering lines regulated as a result of rule-making actions commenced by Notice 75-4 and Notice 75-5.

**Report of the Technical Pipeline Safety Standards Committee.**—Section 4(b) of the Natural Gas Pipeline Safety

Act of 1968 requires that all proposed standards and amendments to such standards pertaining to gas pipelines be submitted to the Committee and that the Committee be afforded a reasonable opportunity to prepare a report on the "technical feasibility, reasonableness, and practicability of each proposal." The proposed amendment to Part 192 was submitted to the Committee as Item A-3 in a list of three proposed amendments.

On April 16, 1976, the Committee filed the following favorable report:

This communication is the official report of the Technical Pipeline Safety Standards Committee concerning the Committee's action on three amendments to 49 CFR Part 192 proposed by the Office of Pipeline Safety Operations and other matters which the Committee decided should be brought to the attention of the Department of Transportation.

The following described actions were taken by the Committee at a meeting held in New Orleans, Louisiana on March 30, 31, 1976.

Item A-3 of the agenda was a proposal by OPSO to revise Section 192.313, Bends and elbows, to permit the use of pipe which has been field bent to a greater degree than presently permitted by the regulations.

By a vote (12 affirmative—1 negative) the Committee found that the change to Section 192.313 Bends and elbows, proposed by OPSO is technically feasible, reasonable and practicable and should be implemented. The Committee also voted (12 affirmative—1 negative) to recommend to OPSO that a proposed rulemaking be instituted to provide for a revision of the ovality restrictions in Section 192.313.

Attached is (sic) the minority views of Mr. Charles Maxwell who opposed approval of the proposed change to Section 192.313.

Throughout the body of this report the OPSO proposals which were accepted by the Committee as technically feasible, reasonable and practicable were those proposals contained in the agenda submitted to the Committee and do not necessarily conform to the proposals contained in the Notice of Proposed Rulemaking which appeared in the Federal Register.

Mr. Maxwell's minority views are as follows:

On March 30, 1976 I voted negatively on the Committee's recommendation that certain revisions proposed by the Office of Pipeline Safety Operations staff be made to Section 192.313—Bends and Elbows—regulations for the Transportation of Gas by Pipeline; using performance type language.

I agree that the current provisions of Section 192.313 are too restrictive and do not reflect the modern ability to make satisfactory bends with more than one and one-half degrees deflection, utilizing modern bending machinery and techniques, including the use of internal mandrels. I also agree the bending regulations in Part 192—Gas Pipelines and Part 195—Oil Pipelines, should be the same.

It is my position that because the regulations apply to both large and small operators, and because smaller operators may not have the operational skills and experience of the larger operators, there should be some further more explicit regulatory requirements.

The Michigan Public Service Commission in its comments on Notice 75-7, Docket No. OPSO-23, Bending Limitations, pointed out that the present language in the ANSI B31.4 Code, 1974 Edition, Section 406.2.1, requires a test be made to determine if the field bend-

ing procedures meet the bend quality requirements of 434.7.1 of such Code and that the wall thickness of the pipe after bending is not less than the permitted minimum pipe specifications.

The Michigan Commission submitted proposed regulations to reflect the above mentioned provisions of B31.4, and also submitted proposed regulations to require a Sonogage check be made in the bend area to insure that the pipe wall thickness has not been reduced to less than the minimum specified thickness.

The Michigan Commission submitted a proposed regulation requiring bending shoes to be lined with a suitable material to minimize stress concentration due to protruding welds, and submitted a proposed regulation to require non-destructive testing of a weld after bending, to detect marginal weld defects which might enlarge during the bending process.

I feel that such proposed additional regulations are necessary to properly implement the intentions of the performance language as proposed by the OPSO staff and recommended by a majority of the Committee.

#### EFFECTIVE DATE

Because the amendments to Part 192 do not impose an additional burden on anyone and are intended to improve existing safety criteria, good cause exists for making the amendments effective in less than 30 days after issuance on July 1, 1976. Liquid carriers, however, may need additional time to prepare for compliance with the new nondestructive testing requirement adopted as § 195.212(c). In view of existing industry practices, MTB believes that an additional 30 days would be reasonably needed; and thus, the amendments to Part 195 become effective July 31, 1976.

In consideration of the foregoing, Parts 192 and 195 of Title 49 of the Code of Federal Regulations are amended as follows:

1. Section 192.313 is revised to read as follows:

#### § 192.313 Bends and elbows.

(a) Each field bend in steel pipe, other than a wrinkle bend made in accordance with § 192.315, must comply with the following:

(1) A bend must not impair the serviceability of the pipe.

(2) For pipe more than 4 inches in nominal diameter, the difference between the maximum and minimum diameter at a bend must not be more than 2½ percent of the nominal diameter.

(3) Each bend must have a smooth contour and be free from buckling, cracks, or any other mechanical damage.

(4) On pipe containing a longitudinal weld, the longitudinal weld must be as near as practicable to the neutral axis of the bend.

(b) Each circumferential weld of steel pipe which is located where the stress during bending causes a permanent deformation in the pipe must be non-destructively tested either before or after the bending process.

(c) Wrought-steel welding elbows and transverse segments of these elbows may not be used for changes in direction on steel pipe that is 2 inches or more in

diameter unless the arc length, as measured along the crotch, is at least 1 inch. (Sec. 3, Pub. L. 90-481, 82 Stat. 721, 49 USC 1672; 40 FR 43901, 49 CFR 1.53).

2. Section 195.212 is revised to read as follows:

#### § 195.212 Bending of pipe.

(a) Pipe must not have a wrinkle bend.

(b) Each field bend must comply with the following:

(1) A bend must not impair the serviceability of the pipe.

(2) Each bend must have a smooth contour and be free from buckling, cracks, or any other mechanical damage.

(3) On pipe containing a longitudinal weld, the longitudinal weld must be as near as practicable to the neutral axis of the bend.

(c) Each circumferential weld which is located where the stress during bending causes a permanent deformation in the pipe must be nondestructively tested either before or after the bending process.

3. A new section, § 195.216 is established to read as follows:

#### § 195.216 Welding: miter joints.

A miter joint is not permitted (not including deflections up to 3 degrees that are caused by misalignment).

4. The following new section heading is added to the table of sections in Part 195:

Sec.

195.216 Welding, miter joints.

(Sec. 6, Pub. L. 89-670, 80 Stat. 937 (49 USC 1655); (18 USC 831-835); 40 FR 43001, 49 CFR 1.53).

Issued in Washington, D.C. on June 17, 1976.

JAMES T. CURTIS, Jr.,  
Director,

Materials Transportation Bureau.

[FR Doc.76-18292 Filed 6-23-76;8:45 am]

## CHAPTER X—INTERSTATE COMMERCE COMMISSION

### SUBCHAPTER A—GENERAL RULES AND REGULATIONS

#### PART 1000—THE COMMISSION

##### Canons of Conduct

1. Appendix I to Subpart B of Part 1000 of Chapter X of Title 49 of the Code of Federal Regulations is amended to add the following positions:

APPENDIX I—LIST OF EMPLOYEES REQUIRED TO SUBMIT ICC FORM NO. 1104

##### BUREAU OF ACCOUNTS

20. Assistant Chief, Section of Cost and Valuation.

##### BUREAU OF OPERATIONS

20. Chief, Operational Branch, Section of Railroads.

This amendment approved by the U.S. Civil Service Commission on June 17,