

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of
 CP NATIONAL CORPORATION, PACIFIC
 GAS AND ELECTRIC COMPANY, SAN DIEGO
 GAS AND ELECTRIC COMPANY, SOUTHERN
 CALIFORNIA GAS COMPANY, SOUTHWEST
 GAS CORPORATION, public utility gas
 corporations, for an Order Modifying
 General Order No. 112-D adopted
 June 5, 1979, in Decision No. 90372
 in order to conform with the changes
 to the Minimum Federal Safety
 Standard, issued by the Department of
 Transportation, Office of Pipeline
 Safety Regulations, Materials
 Transportation Bureau, as more
 particularly set forth in the
 Application herein.

Application 82-10-59
(Filed October 27, 1982)

Peter W. Hanschen and Robert McLennan,
 Attorneys at Law, for Pacific Gas and
 Electric Company; Michael D. Gayda,
 Attorney at Law, for Southern California
 Gas Company; Barton M. Myerson,
 Attorney at Law, for San Diego Gas &
 Electric Company; and James A. Clark,
 for CP National Corporation; applicants.
Vince MacKenzie and Alberto Guerrero,
 Attorneys at Law, and John Dutcher, for
 the Commission staff.

O P I N I O N

This application was filed under Section 142.1 of General Order (GO) 112-D.¹ Applicants request an order modifying the GO adopted June 5, 1979, in Decision 90372, as subsequently amended. Specifically, applicants request to revise Section 192.7; delete Section 192.17; revise Sections 192.113, 192.117, 192.145, 192.163, 192.225, 192.227, 192.229, 192.237, 192.239, 192.241, 192.455, and 192.557; Appendix A; and Appendix B to conform with changes to 49 CFR Part 192, the Minimum Federal Safety Standards, issued by the Office of Pipeline Safety Regulation, Materials Transportation Bureau, United States Department of Transportation (MTB).

MTB has amended 14 sections and both appendixes of 49 CFR Part 192 to (1) replace the term "ladle analysis" with "heat analysis"; (2) replace various documents incorporated by reference with revised editions or the appropriate new designations; (3) limit reference to specific editions of documents incorporated by reference to the appendixes; (4) list only applicable editions of documents incorporated by reference in the appendixes; (5) no longer require a method for identifying locations of metal alloy fittings; and (6) delete one section of 49 CFR Part 192 to eliminate the requirement to file inspection and maintenance plans with federal or state agencies.

¹ Section 142.1 of the GO provides:

"142.1. For the purpose of keeping the provisions, rules, standards, and specifications of this General Order up-to-date, the gas utilities subject to these rules, either individually or collectively, shall file an application setting forth such recommended changes in rules, standards, or specifications as they deem necessary to keep this General Order up-to-date in keeping with the purpose, scope and intent thereof. However, nothing herein shall preclude other interested parties from initiating appropriate formal proceedings to have the Commission consider any changes they deem appropriate, or the Commission from acting upon its own motion."

Hearing

A duly noticed prehearing conference (PHC) and hearing were held before Administrative Law Judge J. J. Doran in San Francisco on October 5, 1983 and November 21, 1983, respectively. The matter was submitted upon the receipt of proposed changes to the GO stipulated to by all the parties at hearing on November 21, 1983.

Discussion

At the PHC, the Commission staff concurred with applicants in many of the proposed changes to the GO, proposed some modifications which were acceptable to the applicants, and proposed some modifications in which there were disagreements.

A procedural schedule was developed to exchange testimony and parties indicated that they would continue to work on their differences as well as testimony.

These differences had been in the areas of increased requirements for controlling plastic pipe size (6-inch maximum diameter), certification by the manufacturer of the plastic pipe to be capable of outdoor weathering, protection of plastic pipe from weathering, and testing of plastic pipe after a long period in storage.

At hearing, all parties stipulated to the proposed changes in the GO.

Plastic pipe larger than 6 inches in diameter would not be allowed, except on a trial basis with the approval of the Commission for each installation. The standards for certification, protection, and testing satisfied the staff's concerns. The parties recommend that the proposed changes related to certification, protection, and testing apply only to plastic pipe purchased on and after the effective date of the decision. The other changes were the uncontested items concurred in at the PHC, including codifying the California industry practice of not designing systems for new cast iron pipe and maintaining existing cast iron systems in accordance with American National Standards Institute (ANSI) C 101-67.

The stipulated proposal would conform our GO to the minimum federal standards and would incorporate special conditions applicable to California. It would not adversely affect public safety, or the interests of ratepayers, or gas utilities.

Findings of Fact

1. It is in the interest of the gas customers and gas corporations and will promote public safety in California for the GO to be revised to conform to the changes in the Minimum Federal Safety Standards issued by MTB as modified by all of the parties at hearing to include requirements for controlling plastic pipe size, certification, protection, and testing. The above revisions are set forth in the appendix to this decision.

2. The stipulated modifications are in excess of the federal minimum standards. The modifications limit plastic pipeline size to 6 inches in diameter and set forth certification, protection, and testing standards.

3. It is reasonable to limit the plastic pipe diameter to 6 inches until we have more experience.

4. It is reasonable to allow plastic pipe over 6 inches in diameter on a trial basis with the approval of the Commission for each installation.

5. The proposed certification, protection, and testing standards should minimize pipe failure and are reasonable.

Conclusions of Law

1. The application as modified by the stipulation of all the parties at hearing should be granted.

2. The proposed certification, protection, and testing standards should apply only to plastic pipe purchased on and after the effective date of this decision.

O R D E R

IT IS ORDERED that:

1. General Order (GO) 112-D is revised as shown in the appendix. These changes will conform the GO to the Minimum Federal Safety Standards issued by the Office of Pipeline Safety Regulation, Materials Transportation Bureau, United States Department of Transportation.

2. The plastic pipe certification, protection, and testing standards in the revised GO shall apply only to plastic pipe purchased on and after the effective date of this decision.

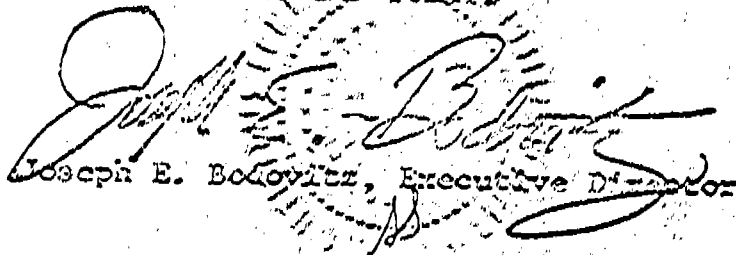
3. A copy of this decision shall be mailed to each gas corporation under the jurisdiction of this Commission.

This order becomes effective 30 days from today.

Dated MAY 2 1984 , at San Francisco, California.

LEONARD M. GRIMES, JR.
President
VICTOR CALVO
PRISCILLA C. GREW
DONALD VIAL
WILLIAM T. BAGLEY
Commissioners

I CERTIFY THAT THIS DECISION
WAS APPROVED BY THE ABOVE
COMMISSIONERS TODAY.


Joseph E. Bodovitz, Executive Director

APPENDIX

Agreed - upon changes to General Order 112-D

1) In Section 192.3 the definition of "State" should be revised to correct an error and should read as follows:

"State" means the State of California.

2) Paragraph (b) of Section 192.7, Incorporation by reference, should be amended by adding two sentences at the end so it reads as follows:

(b) The full titles for the publications incorporated by reference in this part are provided in Appendix A to this part. Numbers in parentheses indicate applicable editions. Only the latest listed edition applies except that an earlier listed edition may be followed with respect to pipe or components manufactured, designed, or installed in accordance with that earlier edition before a later edition was adopted, unless otherwise specified in Appendix A or other sections.

3) In Section 192.59, Plastic pipe, Paragraphs (d) and (e) should be added to read:

(d) At the time of installation plastic pipe shall not have been subjected to unprotected outdoor exposure longer than the time recommended by the manufacturer, shall be free of deterioration from weathering, and:

- (1) Black polyethylene pipe must be certified by the manufacturer to be capable of withstanding continual outdoor weathering including direct sunlight for at least five years. After not more than five years of cumulative unprotected outdoor exposure, black polyethylene must be tested in accordance with section 192.59(e). Pipe which passes the test must be used within one year. Pipe which fails must be discarded.
- (2) Non-black polyethylene pipe must be certified by the manufacturer to comply with ASTM F678. After not more than one cumulative year of unprotected outdoor exposure in custody of the utility, non-black polyethylene pipe must be tested in accordance with Section 192.59(e). Pipe which fails the test must be discarded.
- (3) No later than eighteen months from the month of manufacture, non-black polyethylene pipe must be covered or stored in a manner which will protect it from direct exposure to sunlight or weathering. Pipe not protected after this time shall be discarded. Non-black polyethylene pipe in transit from storage to installation need not be protected, provided that such exposure does not exceed 30 days.

- (e) A compressed-ring test complying with Section 192.59(d) shall be performed in the following manner:

A ring of uniform width approximately one inch wide shall be cut from a length of pipe being tested. The ring shall be compressed between two parallel flat plates until the center opening of the pipe is completely closed. After two minutes, while it is still compressed, the sides of the ring shall be examined for cracks at the locations of greatest curvature (where the wall is folded). The ring should then be released from compression and be examined internally and externally for cracking. A visible crack will be considered evidence of pipe failure.

- 4) The table in Section 192.113, Longitudinal joint factor (E) for steel pipe, should be amended to delete ASTM A 155 and add ASTM A 671, ASTM A 672 and ASTM A 691, so that it reads as follows:

192.113 Longitudinal joint factor (E) for steel pipe.

The longitudinal joint factor to be used in the design formula in Section 192.105 is determined in accordance with the following table:

Specification	Pipe Class	Longitudinal Joint Factor (E)
ASTM A 53	Seamless	1.00
	Electric Resistance Welded	1.00
	Furnace Butt Welded60
ASTM A 106	Seamless	1.00
ASTM A 134	Electric Fusion Arc Welded80
ASTM A 135	Electric Resistance Welded	1.00
ASTM A 139	Electric Fusion Welded80
ASTM A 211	Spiral Welded Steel Pipe80
ASTM A 333	Seamless	1.00
	Electric Resistance Welded	1.00
ASTM A 381	Double Submerged Arc Welded	1.00
ASTM A 671	Electric Fusion Welded	1.00
ASTM A 672	Electric Fusion Welded	1.00
ASTM A 691	Electric Fusion Welded	1.00
API 5 L	Seamless	1.00
	Electric Resistance Welded	1.00
	Electric Flash Welded	1.00
	Submerged Arc Welded	1.00
	Furnace Butt Welded60
	Furnace Lap-Welded80
API 5 LX	Seamless	1.00
	Electric Resistance	1.00
	Electric Flash Welded	1.00
	Submerged Arc Welded	1.00
API 5 LS	Electric Resistance Welded	1.00
	Submerged Arc Welded	1.00
Other	Pipe Over 4"80
Other	Pipe 4" or Less60

If the type of longitudinal joint cannot be determined the joint factor to be used must not exceed that designated for "Other".

5) Section 192.117, Design of cast iron pipe should be revised to omit references to obsolete standards and practices, and should read as follows:

192.117 Design of cast iron pipe
Systems will not be designed for new cast iron pipe.
Existing cast iron pipe must be uprated, replaced,
maintained or repaired in accordance with ANSI C101-67.

6) 192.123, Paragraph (e), should be added to read:

(e) Thermosetting plastic pipe larger than 6 inches nominal diameter is not allowed in transmission or distribution systems, and thermoplastic pipe larger than 4 inches nominal diameter is not allowed in transmission or distribution systems, except on a trial basis with the approval of the Commission for each installation.

7) Paragraph (a) of Section 192.145, Valves, should be amended to remove reference to MSS SP-52 (obsolete) and should read as follows:

(a) Each valve must meet the minimum requirements, or the equivalent, of API 6A, API 6D, MSS SP-70, MSS SP-71, or MSS SP-78. A valve may not be used under operating conditions that exceed the applicable pressure - temperature ratings contained in those standards.

8) Paragraph (e) of Section 192.163, Compressor stations: design and construction, should be amended to change ANSI Standard C1 to NFPA-70 (ANSI) indicating new authorship. The paragraph should read as follows:

(e) Electrical facilities. Electrical equipment and wiring installed in compressor stations must conform to the National Electrical Code, NFPA-70 (ANSI), so far as that Code is applicable

9) The title of Section 192.197 should be amended to correct an error, and should read as follows:

192.197 Control of the pressure of gas delivered from high-pressure distribution systems

10) Paragraph (a) of Section 192.225, Qualification of welding procedures, should be amended to remove references to specific dates of standards and should read as follows:

(a) Each welding procedure must be qualified under Section IX of the ASME Boiler and Pressure Vessel Code or Section 2 of API Standard 1104, whichever is appropriate to the function of the weld, except that a welding procedure qualified under an earlier edition listed in Appendix A may continue to be used but may not be requalified under the earlier edition.

11) Paragraphs (b)(1) and (b)(2) of Section 192.225, Qualification of welding procedures, should be amended to show heat analysis rather than ladle analysis, and should read as follows:

- (1) Carbon steels that have a carbon content of 0.32 percent (heat analysis) or less.
- (2) Carbon steels that have a carbon equivalent (C + 1/4 Mn) of 0.65 percent (heat analysis) or less.

12) Paragraph (a) of Section 192.227, Qualification of welders, should be amended to delete references to specific dates of standards and should read as follows:

- (a) Except as provided in paragraph (c) of this section, each welder must be qualified in accordance with Section IX of the ASME Boiler and Pressure Vessel Code or Section 3 of API Standard 1104. However, a welder qualified under an earlier edition listed in Appendix A may weld but may not requalify under that earlier edition.

13) Paragraphs (b)(1) and (b)(2) of Section 192.227, Qualification of welders, should be amended to show heat analysis instead of ladle analysis, and should read as follows:

- (1) Carbon steels that have a carbon content of 0.32 percent (heat analysis) or less.

- (2) Carbon steels that have a carbon equivalent (C + 1/4 Mn) of 0.65 percent (heat analysis) or less.

14) Paragraph (c) of Section 192.229, Limitations on welders, should be amended to remove references to earlier obsolete standards, and should read as follows:

(c) A welder qualified under Section 192.227 (a) may not weld unless within the preceding 6 calendar months the welder has had one weld tested and found acceptable under Section 3 or 6 of API Standard 1104, except that a welder qualified under an earlier edition listed in Appendix A may weld but may not requalify under that earlier edition.

15) Paragraph (a) of Section 192.237, Preheating, should be amended to show heat analysis rather than ladle analysis, and should read as follows:

(a) Carbon steel that has a carbon content in excess of 0.32 percent (heat analysis) or a carbon equivalent (C + 1/4 Mn) in excess of 0.65 percent (heat analysis) must be preheated for welding.

16) Paragraphs (a) and (b) of Section 192.239, Stress relieving, should be amended to correct an error and to show heat analysis rather than ladle analysis. The paragraph should read as follows:

(a) Except as provided in paragraph (f) of this section, each weld on carbon steel that has a carbon content in excess of 0.32 percent (heat analysis) or a carbon equivalent ($C + 1/4 Mn$) in excess of 0.65 percent (heat analysis) must be stress relieved as prescribed in Section VIII of the ASME Boiler and Pressure Vessel Code.

(b) Except as provided in paragraph (f) of this section, each weld on carbon steel that has a carbon content of less than 0.32 percent (heat analysis) or a carbon equivalent ($C + 1/4 Mn$) of less than 0.65 percent (heat analysis) must be thermally stress relieved when conditions exist which cool the weld at a rate detrimental to the quality of the weld.

17) Paragraph (c) of section 192.241, Inspection and test of welds, should be amended to omit reference to a specific date of standard, and should read as follows:

(c) The acceptability of a weld that is nondestructively tested or visually inspected is determined according to the standards in Section 6 of API Standard 1104.

18) Part II, Appendix A, and Part II, Appendix B, Section I, should be revised to show current addresses and more recent edition dates, and to add ASTM F 678. Revised appendices should read as follows:

PART II

APPENDIX A

Materials Incorporated by Reference

- I. List of organizations and addresses
 - A. American National Standards Institute (ANSI), 1430 Broadway, New York, New York 10018 (formerly the United States of America Standards Institute (USASI). All current standards issued by USASI and ASA have been redesignated as American National Standards and continued in effect.
 - B. American Petroleum Institute (API) 1801 K Street, NW, Washington, DC 20006 or 300 Corrigan Tower Building, Dallas, Tex. 75201.
 - C. The American Society of Mechanical Engineers (ASME), United Engineering Center, 345 East 47th Street, New York, New York 10017.
 - D. American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103.
 - E. Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 5203 Leesburg Pike, Suite 502, Falls Church, VA 22041
 - F. National Fire Protection Association (NFPA), Batterymarch Park, Quincy, Massachusetts 02269
- II. Documents incorporated by reference. Numbers in parentheses indicate applicable editions. Only the latest listed edition applies except that an earlier listed edition may be followed with respect to pipe or components which are manufactured, designed, or installed in accordance with the earlier edition before the latest edition is adopted, unless otherwise provided in this part.
 - A. American Petroleum Institute.
 - (1) API Standard 5A "API Specification for Casing, Tubing, and Drill Pipe" (1968, 1971, 1973 plus Supp. 1, 1979).

- (2) API Standard 6A "API Specification for Wellhead Equipment" (1968, 1974, 1979)
 - (3) API Standard 6D "API Specification for Pipeline Valves" (1968, 1974, 1977).
- A. American Petroleum Institute.
- (4) API Standard 5L "API Specification for Line Pipe" (1967, 1970, 1971 plus Supp. 1, 1973 plus Supp. 1, 1975, 1980).
 - (5) API Standard 5LS "API Specification for Spiral-Weld Line Pipe" (1967, 1970, 1971 plus Supp. 1, 1975 plus Supp. 1, 1977, 1980).
 - (6) API Standard 5LX "API Specification for High-Test Line Pipe" (1967, 1970, 1971 plus Supp. 1, 1973 plus Supp. 1, 1975 plus Supp. 1, 1977, 1980).
 - (7) API Recommended Practice 5L1 "API Recommended Practice for Railroad Transportation of Line Pipe" (1967, 1972).
 - (8) API Standard 1104 "Standard for Welding Pipe Lines and Related Facilities" (1968, 1973, 1980).
- B. The American Society for Testing and Materials:
- (1) ASTM Specification A53 "Standard Specification for Welded and Seamless Steel Pipe" (A53-65, A53-68, A53-73, A53-79).
 - (2) ASTM Specification A72 "Standard Specification for Welded Wrought-Iron Pipe" (A72-64T, A72-68, Superseded 1983).
 - (3) ASTM Specification A106 "Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service" (A106-66, A106-68, A106-72A, A106-79b).
 - (4) ASTM Specification A134 "Standard Specification for Electric Fusion (Arc)-Welded Steel Plate Pipe, Sizes 16 in. and over" (A134-64, A134-68, A134-73, A134-74).
 - (5) ASTM Specification A135 "Standard Specification for Electric-Resistance-Welded Steel Pipe" (A135-63T, A135-68, A135-73a, A135-79).
 - (6) ASTM Specification A139 "Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (Sizes 4 in. and over)" (A139-64, A139-68, A139-73, A139-74).
 - (7) ASTM Specification A155 "Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service" (A155-65, A155-68, A155-72a, Superseded 1983).
 - (8) ASTM Specification A211 "Standard Specification for Spiral-Welded Steel or Iron Pipe" (A211-63, A211-68, A211-73, A211-75).
 - (9) ASTM Specification A333 "Standard Specification for Seamless and Welded Steel for Low Temperature Service" (A333-64, A333-67, A333-73, A333-79).

B. The American Society for Testing and Materials:

- (10) ASTM Specification A372 "Standard Specification for Carbon and Alloy Steel Forgings for Thin-Walled Pressure Vessel" (A372-67, A372-71, A372-78).
- (11) ASTM Specification A377 "Standard Specification for Cast Iron and Ductile Iron Pressure Pipe" (A377-66, A377-73, A377-79).
- (12) ASTM Specification A381 "Standard Specification for Metal-Arc-Welded Steel Pipe for High-Pressure Transmission Systems" (A381-66, A381-68, A381-73, A381-79).
- (13) ASTM Specification A539 "Standard Specification for Electric Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines" (A539-65, A539-73, A539-79).
- (14) ASTM Specification A671 "Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures" (A671-77).
- (15) ASTM Specification A672 "Electric-Fusion-Welded Steel Pipe For High-Pressure Service At Moderate Temperatures" (A672-79).
- (16) ASTM Specification A691 "Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service At High Temperatures" (A691-79).
- (17) ASTM Specification B42 "Standard Specification for Seamless Copper Pipe, Standard Sizes" (B42-62, B42-66, B42-72, B42-80).
- (18) ASTM Specification B68 "Standard Specification for Seamless Copper Tube, Bright Annealed" (B68-65, B68-68, B68-73, B68-80).
- (19) ASTM Specification B75 "Standard Specification for Seamless Copper Tube" (B75-65, B75-68, B75-73, B75-80).
- (20) ASTM Specification B88 "Standard Specification for Seamless Copper Water Tube" (B88-66, B88-72, B88-80).
- (21) ASTM Specification B251 "Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube" (B251-66, B251-68, B251-72, B251-76).
- (22) ASTM Specification D638 "Standard Test Method for Tensile Properties of Plastic" (D638-77a).

- B. The American Society for Testing and Materials:
- (23) ASTM Specification D2513 "Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings" (D2513-68, D2513-70, D2513-71, D2513-73, D2513-74a, D2513-81).
 - (24) ASTM Specification D2517 "Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings" (D2517-66T, D2517-67, D2517-73) (Reapproved 1979).
 - (25) ASTM Specification F678, "Standard Specification for Polyethylene Gas Pressure Pipe, Tubing and Fittings": (F678-82).
- C. The American National Standards Institute, Inc.:
- (1) ANSI A21.11 "Rubber-Gasket Joints for Cast-Iron and Ductile-Iron, and Grey Iron Pressure Pipe and Fittings" (A21.11-1964, A21.11-1972, A21.11-1979).
 - (2) ANSI A21.50 "Thickness Design for Ductile Iron Pipe: (A21.50-1965, A21.50-1971, A21.50-1976).
 - (3) ANSI A21.52 "Ductile-Iron Pipe, Centrifugally Cast, In Metal Molds or Sand-Lined Molds for Gas" (A.21.52-1965, A21.52-1971, A21.52-1976).
 - (4) ANSI B16.1 "Cast Iron Pipe Flanges and Flanged Fittings" (B16.1-1967, B16.1-1975).
 - (5) ANSI B16.5 "Steel Pipe Flanges and Flanged Fittings (B16.5-1968, B16.5-1973, B16.5-1977).
 - (6) ANSI B16.24 "Bronze Pipe Flanges and Flanged Fittings" (B16.24-1962, B16.24-1971, B16.24-1979).
 - (7) ANSI B36.10 "Wrought Steel and Wrought Iron Pipe" (B36.10-1959, B36.10-1970, B36.10-1979).
 - (8) ANSI C1 "National Electric Code" (C1-1968, C1-1975).
 - (9) ANSI/AWWA C101-67 "Thickness Design of Cast-Iron Pipe" (C101-67-1977).
- D. The American Society of Mechanical Engineers:
- (1) ASME Boiler and Pressure Vessel Code, Section VIII "Pressure Vessels, Division 1" (1968, 1974, 1977).
 - (2) ASME Boiler and Pressure Vessel Code Section IX "Welding Qualifications (1968, 1974, 1977).

- E. Manufacturer's Standardization Society of the Valve and Fittings Industry:
- (1) MSS SP-25 "Standard Marking System for Valves, Fittings, Flanges, and Union" (1964, 1978).
 - (2) MSS SP-44, "Steel Pipe Line Flanges (1955, 1972, 1975).
 - (3) MSS SP-52 "Cast Iron Pipe Line Valves" (1957). (Superseded 7/1/76).
 - (4) MSS SP-70 "Cast Iron Gate Valves, Flanged and Threaded Ends." (1970, 1976).
 - (5) MSS SP-71 "Cast Iron Swing Check Valves, Flanged and Threaded Ends" (1970, 1976).
 - (6) MSS SP-78 "Cast Iron Plug Valves (1972, 1977).
- F. National Fire Protection Association:
- (1) NFPA Standard 30 "Flammable and Combustible Liquids Code" (1969, 1973, 1977).
 - (2) NFPA Standard 58 "Standard for the Storage and Handling of Liquefied Petroleum Gases" (1969, 1972, 1979).
 - (3) NFPA Standard 59 "Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants" (1968, 1979).
 - (4) NFPA Standard 59A Storage and Handling Liquefied Natural Gas" (1971, 1972, 1979).
 - (5) "National Electric Code" NFPA-70 (ANSI) (1978).

PART II

APPENDIX B

Qualification of Pipe

- I. Listed Pipe Specifications. Numbers in parentheses indicate applicable editions. Only the latest listed edition applies except that an earlier listed edition may be followed with respect to pipe or components which are manufactured, designed, or installed in accordance with the earlier edition before the latest edition is adopted, unless otherwise provided in this part.
- API 5L-Steel and iron pipe (1967, 1970, 1971, plus Supp. 1, 1973 plus Supp. 1, 1975, 1980).
 - API 5 LS-Steel pipe (1967, 1970, 1971 plus Supp. 1, 1973 plus Supp. 1, 1975 plus Supp. 1, and 1977, 1980).
 - API 5LX-Steel pipe (1967, 1970, 1971 plus Supp. 1, 1973 plus Supp. 1, 1975 plus Supp. 1 and 1977, 1980).
 - ASTM A53-Steel pipe (1965, 1968, 1973, 1979).
 - ASTM A106-Steel Pipe (1966, 1968, 1972a, 1979).
 - ASTM A134-Steel Pipe (1964, 1968, 1973, 1974).
 - ASTM A135-Steel Pipe (1963T, 1968, 1973a, 1979).
 - ASTM A139-Steel Pipe (1964, 1968, 1973, 1974).
 - ASTM A211-Steel and iron pipe (1963, 1968, 1973, 1975).
 - ASTM A333-Steel Pipe (1964, 1967, 1973, 1979).
 - ASTM A377-Cast Iron Pipe (1966, 1973, 1979).
 - ASTM A381-Steel Pipe (1966, 1968, 1973, 1979).
 - ASTM A539-Steel Tubing (1965, 1973, 1979).
 - ASTM B42-Copper pipe (1962, 1966, 1972, 1980).
 - ASTM B68-Copper tubing (1965, 1968, 1973, 1980).
 - ASTM B75-Copper tubing (1965, 1968, 1973, 1980).
 - ASTM B88-Copper tubing (1966, 1972, 1980).
 - ASTM B251-Copper pipe and tubing (1966, 1968, 1972, 1976).
 - ASTM D2513-Thermoplastic pipe and tubing (1966T, 1968, 1970, 1971, 1973, 1974a, 1981).
 - ASTM D2517-Thermosetting plastic pipe and tubing (1966T, 1967, 1973).
 - ASTM F678-Thermoplastic pipe and tubing (1982).
 - ANSI A21.52-Ductile iron pipe (1965, 1971).

19) Typographic corrections should be made on the second page of the Table of Contents at the front of General Order 112-D so it reads as follows:

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