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NATURAL GAS PIPELINE SAFETY

GOVERNMENT

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HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION

OF THE

COMMITTEE ON COMMERCE

UNITED STATES SENATE

NINETY-SECOND CONGRESS

FIRST SESSION

ON

S. 980

TO AMEND THE NATURAL GAS PIPELINE SAFETY ACT OF 1968

S. 1910

TO AMEND THE NATURAL GAS PIPELINE SAFETY ACT OF 1968
TO CLARIFY CONGRESSIONAL INTENT AS TO THE APPROPRI-
ATENESS OF THE JUDICIAL FIXING OF PENALTIES FOR
CERTAIN SAFETY VIOLATIONS, AND TO MODIFY THE GRANT-
IN-AID PROGRAM TO STATE AGENCIES PARTICIPATING IN
SAFETY REGULATION UNDER THE ACT, AND FOR OTHER
PURPOSES

H.R. 5065

TO AMEND THE NATURAL GAS PIPELINE SAFETY ACT OF 1968

NOVEMBER 9, 1971

Serial No. 92-51

Printed for the use of the Committee on Commerce



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NATURAL GAS PIPELINE SAFETY

TUESDAY, NOVEMBER 9, 1971

U.S. SENATE,
COMMITTEE ON COMMERCE,
SURFACE TRANSPORTATION SUBCOMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:05 a.m., in room 5110, New Senate Office Building, Hon. Vance Hartke (chairman of the subcommittee) presiding.

Present: Senators Hartke and Beall.

OPENING STATEMENT BY SENATOR HARTKE

Senator HARTKE. Our hearing this morning serves two purposes: First, to provide us with information about the bills before the Senate, one of which has already passed the House of Representatives. Second, and perhaps more importantly, to give us an opportunity to review administration of the Natural Gas Pipeline Safety Act.

From time to time, questions arise as to the effectiveness of the act—questions about the safety regulations issued under it and about the administration of the act itself. When we conducted our last review in July of 1969, we pointed out several inadequacies. The time has come to see how much progress has been made in the last 2 years.

Our continuing goal is to insure the safety of hundreds of thousands of our fellow citizens who live atop of 962,000 miles of gas pipeline, which is buried inside the United States.

We have a list of witnesses today. Unfortunately, Mr. Ralph Nader, who was scheduled to appear this morning, called last night to ask to be excused, since he could not be here this morning.

(The bills and agency comments follow:)

Staff member assigned to this hearing: John Cary

(1)

92D CONGRESS
1ST SESSION

S. 980

IN THE SENATE OF THE UNITED STATES

FEBRUARY 25 (legislative day, FEBRUARY 17), 1971

Mr. MAGNUSON (by request) introduced the following bill; which was read twice and referred to the Committee on Commerce

A BILL

To amend the Natural Gas Pipeline Safety Act of 1968.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That section 5 (a) of the Natural Gas Pipeline Safety Act of
4 1958 (49 U.S.C. 1674 (a)) is amended by deleting there-
5 from the words "two years" and by substituting therefor the
6 words "three years".

7 SEC. 2. Section 15 of such Act (49 U.S.C. 1684) is
8 amended to read as follows:

9 "AUTHORIZATION OF APPROPRIATIONS

10 "SEC. 15. There are authorized to be appropriated such
11 sums as may be necessary to carry out the purposes of this
12 Act."

92^d CONGRESS
1st SESSION

S. 1910

IN THE SENATE OF THE UNITED STATES

MAY 19 (legislative day, MAY 18), 1971

Mr. MAGNUSON introduced the following bill; which was read twice and referred to the Committee on Commerce

A BILL

To amend the Natural Gas Pipeline Safety Act of 1968 to clarify congressional intent as to the appropriateness of the judicial fixing of penalties for certain safety violations, and to modify the grant-in-aid program to State agencies participating in safety regulation under the Act, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. This Act may be cited as the "Natural Gas
4 Pipeline Safety Act Amendment of 1971".

5 SEC. 2. The Natural Gas Pipeline Safety Act of 1968
6 (82 Stat. 720), is amended by inserting the words "by it
7 or the courts of the State," immediately after the words "such
8 State agency" in clause (4) of subsection (a) of section 5.

1 SEC. 3. The Natural Gas Pipeline Safety Act of 1968
2 (82 Stat. 720) is amended by striking the first sentence of
3 paragraph (1) of subsection (c) of section 5 and inserting in
4 lieu thereof a new sentence to read as follows: "Upon ap-
5 plication, the Secretary is authorized to pay out of funds
6 appropriated or otherwise made available up to 50 per cen-
7 tum of the cost of the personnel, equipment, and activities of
8 a State agency reasonably required, during the ensuing fis-
9 cal year to carry out a safety program under a certification
10 under subsection (a) or an agreement under subsection (b)
11 of this section; or to act as agent of the Secretary in enforce-
12 ing Federal safety standards for pipeline facilities or the
13 transportation of gas subject to the jurisdiction of the Federal
14 Power Commission under the Natural Gas Act."

15 SEC. 4. The Natural Gas Pipeline Safety Act of 1968
16 is further amended by adding at the end of subsection (c)
17 of section 5 the following:

18 "(4) On or before January 1 next preceding the com-
19 mencement of each fiscal year, the Secretary shall certify to
20 each such State agency the funds which he has apportioned
21 hereunder to each State for such fiscal year. As soon as prac-
22 ticable after the apportionment has been made for each fiscal
23 year, the State agency of any State desiring to obtain finan-
24 cial assistance shall submit to the Secretary for his approval
25 the State's safety program for the use of the funds appor-

tioned for such fiscal year. The Secretary shall act on each State program as soon as practicable after it has been submitted. The Secretary may approve any program in whole or in part. His approval of any program shall be deemed a contractual obligation of the Federal Government for the payment of its apportioned contribution thereto. If a State agency elects not to accept the funds apportioned to it, such funds shall be reapportioned among the other States whose State agencies are eligible to receive Federal funds under this subsection.

“(5) The Secretary may, in his discretion, from time to time as work progresses make payment to a State agency for the annual program costs incurred by it. These payments shall at no time exceed the Federal share of the program costs incurred to the date of the voucher covering such payment. After completion of an annual program and approval of the final voucher by the Secretary, the State agency shall be entitled to payment out of the appropriate funds apportioned to it of the unpaid balance of the Federal share on account of such program. Such payments shall be made to such official or officials or depository as may be designated by the State agency and authorized under the laws of the State to receive public funds of the State.

“(6) Upon application by the national organization of the State commissions submitted on or before September

1 30 of any calendar year, the Secretary shall pay out of the
2 funds appropriated pursuant to this Act, or other available
3 funds, the sum of \$20,000, plus such additional sums as he
4 deems justified, to such national organization, to pay, during
5 the ensuing calendar year, the reasonable cost of (i) con-
6 ducting training of State enforcement personnel, (ii) fur-
7 nishing technical assistance, or (iii) other activities appro-
8 priate for the advancement of the safety programs of State
9 agencies carried on under this Act.

10 SEC. 4. Section 15 of the Natural Gas Pipeline Safety
11 Act of 1968 is amended by inserting "(a)" immediately
12 after "SEC. 15." and by adding at the end thereof the fol-
13 lowing:

14 "(b) For the purpose of further aiding the Secretary
15 in providing financial assistance to State agencies pursuant to
16 section 5 (c) of this Act, there is hereby authorized to be
17 appropriated the additional sum of \$———— for the
18 fiscal year ending June 30, 1972; the additional sum of
19 \$———— for the fiscal year ending June 30, 1973; and
20 the additional sum of \$———— for the fiscal year end-
21 ing June 30, 1974."

92^D CONGRESS
1ST SESSION

H. R. 5065

IN THE SENATE OF THE UNITED STATES

JUNE 22, 1971

Read twice and referred to the Committee on Commerce

AN ACT

To amend the Natural Gas Pipeline Safety Act of 1968.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That the first sentence of section 5 (a) of the Natural Gas
4 Pipeline Safety Act of 1968 (49 U.S.C. 1674 (a)) is
5 amended by striking out "two years" and inserting in lieu
6 thereof "four years".

7 SEC. 2. The first sentence of section 5 (c) (1) of such
8 Act (49 U.S.C 1674 (c) (1)) is amended to read as fol-
9 lows: "If an application is submitted not later than Septem-
10 ber 30 in any calendar year, the Secretary shall pay out of
11 all funds appropriated pursuant to section 15 for grants-in-

1 aid for State safety programs up to 50 per centum of the
2 cost of the personnel, equipment, and activities of a State
3 agency reasonably required to carry out a safety program
4 under a certification under subsection (a) or an agreement
5 under subsection (b) of this section during the following
6 calendar year.”.

7 SEC. 3. Section 15 of such Act (49 U.S.C. 1684) is
8 amended to read as follows:

9 “APPROPRIATIONS AUTHORIZED

10 “SEC. 15. For the purpose of carrying out the provi-
11 sions of this Act over a period of three fiscal years, begin-
12 ning with the fiscal year ending June 30, 1972, there is
13 authorized to be appropriated not to exceed \$3,000,000 for
14 the fiscal year ending June 30, 1972; not to exceed
15 \$3,800,000 for the fiscal year ending June 30, 1973; and
16 not to exceed \$5,000,000 for the fiscal year ending June 30,
17 1974.”.

Passed the House of Representatives June 21, 1971.

Attest:

W. PAT JENNINGS,

Clerk.

OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., May 14, 1971.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR SENATOR: This is in response to your request for the views of the Department of Justice on S. 980, a bill to amend the Natural Gas Pipeline Safety Act of 1968.

The Natural Gas Pipeline Safety Act, of August 12, 1968 (49 U.S.C. 1671 *et seq.*), provides for establishment, by the Secretary of Transportation, of minimum Federal safety standards for the transportation of gas, and for pipeline facilities, and makes provision for the refinement of such standards and their administration and enforcement.

Section 5(a) of the Act (49 U.S.C. 1674(a)), provided a period of two years (to August 1970) during which States which have adopted the Federal standards could qualify for grants for their enforcement notwithstanding that State law did not make provision for injunctive and monetary sanctions in such enforcement. The first section of the present bill would extend this period to three years.

While the Act which would be amended by this bill appears in every other respect to constitute permanent legislation, section 15 thereof (49 U.S.C. 1684), which contains the sole authorization of appropriations for the purposes of the statute, makes provision for only three years: For the purpose of carrying out the provisions of this chapter over a period of three fiscal years, beginning with the fiscal year ending June 30, 1969, there is authorized to be appropriated not to exceed \$500,000 for the fiscal year ending June 30, 1969; not to exceed \$2,000,000 for the fiscal year ending June 30, 1970; and not to exceed \$4,000,000 for the fiscal year ending June 30, 1971.

Section 2 of the bill would amend section 15 of the statute to read: There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

The Department of Justice has no objection to the enactment of this legislation. However, in the fourth line of the bill there should be substituted 1968 for the present 1958.

The Office of Management and Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

RICHARD G. KLEINDIENST,
Deputy Attorney General.

FEDERAL POWER COMMISSION,
Washington, D.C., June 11, 1971.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: This responds to your request of March 8, 1971, for comments on the subject bill which would amend §§ 5(a) and 15 of P.L. 90-481, the Natural Gas Pipeline Safety Act of 1968. The changes which the bill would make are:

(1) To permit additional time to the State legislatures to comply with the statutory certification requirements of the Act; and

(2) To provide for general authorization of funds rather than the present specific appropriations authorizations.

The Commission has no objection to these proposed changes.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

JOHN N. NASSIKAS,
Chairman.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., August 17, 1971.

B-86339.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: Reference is made to your letter of May 26, 1971, requesting our comments on S. 1910, 92d Congress, which, if enacted, would be cited as the "Natural Gas Pipeline Safety Act Amendment of 1971."

We have no special information as to the advantages or disadvantages of the proposed measure and therefore have no comments with respect to its merits. However, we offer the following remarks for the consideration of the committee.

Neither S. 1910 nor Public Law 90-481—The Natural Gas Pipeline Safety Act of 1968—grant the Comptroller General specific authority to examine the books, records, and documents of the national organization of State commissions or of the recipients of grants or contracts under section 13(a) of the Natural Gas Pipeline Safety Act of 1968. Section 202 of the Intergovernmental Cooperation Act of 1968, Public Law 90-577, approved October 16, 1968, 82 Stat. 1098, 42 U.S.C. 4212, provides that the head of a Federal agency and the Comptroller General of the United States or any of their duly authorized representatives shall have access for the purpose of audit and examination to any books, documents, papers, and records that are pertinent to the "grants-in-aid received by the States." The section does not cover political subdivisions of states or beneficiaries other than States which are grant recipients. Therefore we suggest the addition of language to S. 1910 amending the Natural Gas Pipeline Safety Act of 1968 along the following lines:

"Records and Audit

"(a) Each recipient of assistance under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and disposition by such recipient of the proceeds of such grants or other arrangements, the total cost of the project or undertaking in connection with which such funds are given or used, and the amount of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

"(b) The Secretary and the Comptroller General of the United States or any of their duly authorized representatives shall have access for the purpose of audit and examination to any books, documents, papers and records of recipients that are pertinent to the grants received or arrangements entered into under this Act."

The new subsection (5) proposed in section 4 of the bill to be added to section 5(c) of the 1968 act would authorize the Secretary to make progress payments, on a reimbursable basis, to a State agency for the annual program costs incurred by it. We construe this as precluding advance payments. There thus appears to be no need for the authority in subsection 5(c)(2) of the 1968 act to make advance payments and we suggest that such subsection be repealed.

Sincerely yours,

ROBERT F. KELLER,
Acting Comptroller General of the United States.

OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., August 27, 1971.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, U.S. Senate,
Washington, D.C.

DEAR SENATOR: This is in response to your request for the views of the Department of Justice on S. 1910, (92d Congress, 1st Session) a bill to amend the Natural Gas Pipeline Safety Act of 1968 to clarify congressional intent as to the appropriateness of the judicial fixing of penalties for certain safety violations, and to modify the grant-in-aid program to State agencies participating in safety regulation under the Act, and for other purposes.

Section 2 of the bill would amend section 5 of the Natural Gas Pipeline Safety Act of 1968 to make clear the appropriateness of the fixing of safety violation penalties by States courts.

Section 3 of the bill would amend section 5 of the Act to authorize the Secretary of Transportation to pay out funds up to half the cost of a State agency during the ensuing fiscal year reasonably required to carry out a safety program or an agreement under the Act. Section 3 of the bill also would amend section 5 of the Act by authorizing such payments to meet expenses of State agencies acting as agents of the Secretary in enforcing federal safety standards for pipeline facilities or the transportation of gas.

Section 4 of the bill would add to section 5 of the Act provisions for the apportionment of funds to the State agencies and disbursement thereto to each State conditioned upon the Secretary's approval of the State's program. The section also would authorize the Secretary to pay annually to the national organization of State commissions at least \$20,000 to meet annual reasonable costs of training State enforcement personnel, furnishing technical assistance, or conducting other activities appropriate to the advancement of the safety programs of State agencies carried on under the Act.

Section 5 (incorrectly designated as section 4 in the bill) would provide for appropriations for the fiscal years running through June 30, 1974 for the purpose of further aiding the Secretary in providing financial assistance to State agencies under the Act.

Whether this legislation should be enacted involves questions as to which the Department of Justice defers to the Department of Transportation.

The Office of Management and Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

RICHARD G. KLEINDIENST,
Deputy Attorney General.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., September 29, 1971.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: Your Committee has asked for the views of this Department concerning S. 1910, a bill to amend the Natural Gas Pipeline Safety Act of 1968 to clarify congressional intent as to the appropriateness of the judicial fixing of penalties for certain safety violations and to modify the grant-in-aid program to State agencies participating in safety regulations under the Act, and for other purposes.

The bill would amend the Act to provide, among other things, that the Secretary could accept a certification from a State agency in cases where the State statutes provide for the assessment of civil penalties by a State court, rather than by the State agency having safety jurisdiction over intrastate gas facilities, as the Act now requires. It is the view of this Department that a State agency whose powers of assessing, compromising, and collecting civil penalties lay solely through the courts would be far less effective in assuring compliance with safety standards than a State agency having the same powers as the Secretary.

The bill would further amend the Act to make Federal funds available to reimburse State agencies, which act as agents of the Secretary to aid in enforcing Federal safety standards relating to interstate transmission facilities, up to 50 percent of the State agency expenditures for this purpose. Such reimbursement is presently authorized with respect to State agency expenditures applicable to safety enforcement programs for intrastate gas facilities under a section 5(a) certification or a 5(b) agreement.

The Department made provision for such an agency relationship under the interim minimum Federal safety standards, issued in November 1968, primarily in an effort to assure the same degree of public safety relating to interstate gas pipelines that certain State agencies were providing when the Natural Gas Pipeline Safety Act of 1968 was passed. The preamble to the interim minimum Federal safety standards specifically recognized that the Department was not then staffed to enforce the Federal standards applicable to interstate transmission facilities,

and specifically stated that State action would necessarily be voluntary and "on a nonreimbursable basis until appropriations are made for that purpose."

It is the intent of this Department to continue this agency relationship with any State that desires to enter into it, until such time as the Department is adequately staffed to directly enforce the Federal safety standards applicable to the interstate transmission facilities. It is the further view of this Department that any State serving in the agency relationship should not be required to bear the financial burden alone. Therefore, the Department will not interpose any objection to the amendment of section 5(c) (1) of the Act, as proposed in section 3 of this bill.

The bill would also provide for yearly apportionment of funds to the States under a budgetary arrangement known as "contract authority." Since a number of States do not now have safety jurisdiction over all intrastate gas facilities subject to the Natural Gas Pipeline Safety Act, a statutory requirement for the apportionment of Federal funds may discourage such States from enacting statutes to place all intrastate gas facilities in a single State agency. The Department also is aware of some of the fiscal problems facing State agencies in the development of their respective gas pipeline safety programs. Although there is a time lag of one or possibly two years between the appropriation or earmarking of State funds and availability of Federal matching funds, the Department thus far has no evidence that "contract authority" arrangements would solve these problems.

The bill would also provide for minimum payment of \$20,000 to the national organization of State commissions to advance State agency safety programs. The Department notes that a proposal to allot Federal funds to the National Association of Regulatory Utility Commissioners (NARUC) was reviewed by the Congress during its consideration of the Natural Gas Pipeline Safety Act and was rejected. The Department has no basis to justify a change in that legislative decision.

It therefore appears to the Department that, except for section 3 of the bill, the amendments proposed in this bill are not necessary.

The Office of Management and Budget advised us that from the standpoint of the Administration's program, there is no objection to the submission of this report to the Committee.

Sincerely,

JOHN W. BARNUM,
General Counsel.

Senator HARTKE. Our first witness will be Hon. John H. Reed, who is chairman of the National Transportation Safety Board, and with him will be Mr. David Zimmerman, deputy counsel, Barry Sweedler, chief of the Pipeline Safety Division, and Eric Silberstein, legislative affairs officer.

STATEMENT OF HON. JOHN H. REED, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD; ACCOMPANIED BY DAVID ZIMMERMAN, DEPUTY COUNSEL; BARRY SWEEDLER, CHIEF, PIPELINE SAFETY DIVISION; AND ERIC SILBERSTEIN, LEGISLATIVE AFFAIRS OFFICER

Mr. REED. Mr. Chairman, the National Transportation Safety Board appreciates the opportunity to appear before you this morning to discuss gas pipeline safety. I am John H. Reed, chairman of the board; on my left is Mr. David Zimmerman, our deputy general counsel; and on my right Mr. Barry Sweedler, chief of our Pipeline Safety Division.

In respect to S. 980, H.R. 5065, and S. 1910, we would defer to the views of the Secretary of Transportation, who is the best qualified to evaluate the Department's need in the implementation of the Natural Gas Pipeline Safety Act of 1968.

The proposed amendments are concerned exclusively with the ad-

ministration and funding of the Federal-State program authorized by the statute. The safety board supports one recommendation made by the Department, which will be explained later today by Assistant Secretary Benjamin Davis. This is with respect to the need for an amendment to combine liquid pipeline and gas pipeline safety matters within the Office of the Secretary of Transportation.

At this point I will discuss some activities of the safety board in the gas pipeline safety field. We seek to be of assistance in the implementation of the pipeline safety programs by identifying major safety problems through our accident investigations and studies.

It should first be stated that the number of fatalities from pipeline accidents remains low when compared with other modes of transportation. I would point out, however, that in 1970 there were 40 fatalities due to pipelines as compared with 21 in 1969. Therefore, the possibility of catastrophe is a continuing concern. If several recent accidents had occurred only a few miles one way or the other on the route of the pipeline, major catastrophies would have been the result.

The potential of tragedy in this field is similar to railroad derailments involving hazardous materials. For this reason, we believe it is urgent that there be effective Federal and State action.

In recognition of the above the safety board with a staff of only two pipeline specialists has sought, on a selective basis, to investigate and report pipeline accidents; to participate in the investigation of others; to identify all significant safety problems; and to recommend solutions to the Department, the States, and the pipeline industry.

The board has published three major pipeline accident reports; one special study on a pipeline safety problem; and directed seven separate safety recommendations. The response to these recommendations has been generally favorable, both on the part of the Department of Transportation and the industry.

In undertaking this effort, the board is convinced that a major method of identifying safety problems is through accident investigation. Also, due to a lack of any significant accident investigation effort on the part of the Federal or State governments, the board has found it necessary to enter into this area to the extent already indicated.

In the beginning, we made recommendations to the Department of Transportation concerning provisions which could be incorporated in their initial Federal standards. Thereafter, the major thrust of our efforts has been to make recommendations to the Department and the industry on how these standards can be upgraded and suggestions for needed corrective measures for their implementation.

As you are aware, we now have minimum safety standards for the transportation of natural and other gas by pipeline. Since present standards are a first effort there is naturally a need, as you have indicated earlier, for continued review as to their effectiveness.

Following our investigation of an accident at Gary, Ind., the board made 11 recommendations to the Department concerning provisions which should be included in their initial standards. Ten of the 11 are now covered in the present standards. The one remaining is protection against overpressurization and is still of vital concern to the board.

We recommend that existing regulator stations, not equipped with

overpressure protection, be required to be updated to protect gas customers served by these regulators from experiencing a repeat of the Gary accident. The American Society of Mechanical Engineers, Gas Piping Standards Committee, recognized this problem and included such a requirement in its guide. They also recommend to the Office of Pipeline Safety that the overpressure protection requirement for existing regulators be added to the Federal standards.

Subsequent to the Gary, Ind., accident, the board issued major reports on gas pipeline accidents at Burlington, Iowa, and Houston, Tex., and has investigated gas pipeline accidents at Houma, La.; Farmington, W. Va.; Baltimore, Md.; Philadelphia, Pa.; Lambertville, N.J.; Las Vegas, Nev.; and Fort Worth, Tex.

The major thrust of these efforts has been to make recommendations which would upgrade the existing regulations. In all, we have directed 24 safety recommendations to the Department of Transportation for improving the regulations which, in turn, would help prevent accidents. A summary of those recommendations is attached to my statement.¹

I will now describe briefly what we deem to be the major pipeline safety problems and what our efforts are in those areas. The prime cause of gas pipeline accidents is damage inflicted on underground facilities by excavation or earthmoving equipment. This is a complicated problem involving not only the pipeline companies, but also State and local governments, contractors, machine operators, as well as electric and telephone companies.

While damage can occur to all facilities buried underground, that done to pipelines causes the greatest concern. It is in the pipeline community that leadership and guidance must originate. Although this needed leadership is beginning to emerge in the Federal pipeline safety program, more, of course, remains to be done.

The board recognized this need and emphasized it in the Burlington, Iowa, report of October 1970. In that report, it was noted that while other major causes of pipeline accidents were decreasing, accidents caused by excavation equipment were skyrocketing. The leak reports submitted to DOT in 1970 indicated that 50 percent of transmission accidents and almost 70 percent of distribution accidents were related to pipeline damage caused by outside forces.

This is a problem which can be solved. The board, in its Burlington report, recommended to the States that contractors be required to notify gas utilities prior to commencing excavation or blasting, and that local authorities and others who issue construction permits should cooperate with gas utilities to facilitate the obtaining of notices of proposed construction work.

We further recommended to the DOT that a damage prevention program be required of pipeline operators. The board felt that by requiring the contractors to report their proposed construction activities and requiring the utilities to work in close cooperation with these contractors, great strides could be made toward solving the problem.

Educating the contractor as to what damage and harm he can cause, alerting him to his liabilities, and making it convenient for him to

¹ See p. 17.

report his proposed construction activities will go a long way in promoting cooperation and preventing damage.

This approach was based in part on a few effective damage prevention programs already in operation in certain areas of the country. In addition to highlighting this problem in the report, we have suggested the idea to those groups which could take corrective action.

Another problem area in which the board took prompt action involved the unauthorized operation of gas valves which permitted gas to flow into buildings causing explosions. In two accidents of this type during this past winter, 13 people were killed and almost 100 injured in New York City and Miami Beach.

The board, on April 27, 1971, made a recommendation to DOT for the issuance of regulations which would tend to prevent catastrophic accidents resulting from unauthorized valve operations. The Office of Pipeline Safety acted promptly by issuing proposed rules to implement this recommendation.

The board pointed out another problem in its special study on "Effects of Delay in Shutting Down Failed Pipeline Systems and Methods of Providing Rapid Shutdown," that the effects of many failures could be reduced or the accidents themselves avoided if failed pipelines could be shut down rapidly. The study called for development of standards for rapid shutdown and DOT indicated they would act shortly on the recommendation.

The private groups are very interested in this area, and have endorsed the need for research and offered to participate in any studies undertaken.

Based on our accident investigations and studies, we have also made recommendations in the areas of: Effects of mine subsidence on pipelines, municipal gas operations, over pressure protection, corrosion control, customer education of emergencies, and maximum operating pressure.

We have also been active in the liquid pipeline field and conducted a hearing in February 1971 as part of our investigation into the rupture and subsequent explosion of a propane pipeline in Franklin County, Mo. After the hearing we recommended to the pipeline operator that the pressure in the line be reduced. The company promptly complied with this recommendation.

We are also completing work on an accident report of a products pipeline leak near Jacksonville, Md., in September 1970. Our recommendation to improve the method of reporting liquid pipeline accidents is currently being implemented by DOT.

In addition to the recommendations made to DOT, we have made 31 recommendations to States and the private sector and, in general, we have been very pleased with the response. None of these recommendations have been rejected. All have either been implemented or are under active consideration. The American Society of Mechanical Engineers, Gas Piping Standards Committee, has been extremely responsive, has adopted pipeline safety recommendations, and has generally indicated a desire to assist in solving many of the problems brought out by the safety board's reports.

Other private groups, such as the American Petroleum Institute and the American Gas Association, plan to research their problems on which we have focused attention in our reports.

In addition, many pipeline operators are carefully examining and correcting their procedures in an attempt to avoid the types of problems we have identified.

We will continue to investigate major pipeline accidents, look at problem areas, make recommendations to improve the Federal standards, and prevent pipeline accidents.

Mr. Chairman, that completes my prepared text.

I will be happy to attempt to answer any questions.

Senator HARTKE. Thank you, Mr. Reed.

Do you have a rule of thumb which applies, or is there in the industry a rule of thumb as to how many leaks per mile that are apt to occur?

Mr. REED. I am not aware that we have any rule of thumb on leaks.

Mr. Sweedler, are you aware of any rule of thumb with respect to leaks?

Mr. SWEEDLER. Actually, 1970 was the first year that reports have been required for the reporting of leaks to DOT. These reports have been filed, I understand, but as of yet there is no concrete tabulation of the leaks. There is no way that I know of determining how many leaks there are.

Senator HARTKE. Have you examined these reports?

Mr. SWEEDLER. No; I have not.

Senator HARTKE. Have they been submitted to you?

Mr. SWEEDLER. No; they have not. We have not requested them. This is something that we have planned to do, but they haven't been tabulated as of yet.

Mr. REED. We will be examining these, of course, very closely.

Senator HARTKE. I have here a report for the calendar year 1970, the third annual report.

Have you had a chance to examine this at all?

Mr. SWEEDLER. Yes, we have.

Senator HARTKE. I have been informed by individuals that there is an estimate that you can use as a sort of rule of thumb, that you have about one leak for every mile of gas pipeline.

Have you ever heard of such a rule of thumb?

Mr. REED. I haven't heard it.

Mr. Sweedler has been in this field for a number of years.

Are you aware of anything of this nature, Mr. Sweedler?

Mr. SWEEDLER. Not exactly, sir.

Senator HARTKE. I was wondering if you had examined this report, how you account for the fact that there were only 776 cases of leaks that have been reported when we have over 650,000 miles of gas pipeline.

Mr. SWEEDLER. I think the definition of the leak is probably one point that is in question.

Senator HARTKE. In the definition of a leak as they use it, do you think that is an adequate and sufficient definition?

Mr. SWEEDLER. There are all types of leaks. Some leaks are very, very minor, weeping type of leaks that occur. Some leaks are major.

I think the reporting system requires the reporting of the major leaks.

Senator HARTKE. Doesn't the present reporting system have a tend-

ency to emphasize the leaks which are caused as a result of outside activity rather than by corrosion?

Mr. SWEEDLER. I think the reporting system in those two areas is accurate. It is an accurate picture of what actually is happening as far as the major leaks are concerned.

Senator HARTKE. What do you consider a major leak?

Mr. SWEEDLER. I think there is a definition in the regulation as to the requirements for major leaks.

Senator HARTKE. That is all right.

I will direct those more to the Department of Transportation than to you anyway.

That is all the questions I have this morning. Thank you.

Mr. REED. Thank you very much, Senator.

Senator HARTKE. There may be some other questions which may be submitted by some other members of the committee for you to answer for the record.

Mr. REED. We would be pleased to do that.

(The recommendations referred to on p. 14 follow:)

NATIONAL TRANSPORTATION SAFETY BOARD RECOMMENDATIONS DIRECTED TO
DEPARTMENT OF TRANSPORTATION IN THE FIELD OF GAS PIPELINE SAFETY

SOURCE AND NATURE OF RECOMMENDATION

(Letter to Secretary of Transportation regarding pipeline accident investigation and reporting)

BSTS-68-P-1, 2

OCTOBER 31, 1968.

To Secretary of Transportation:

1. The Board recommends that the functional statement for the Office of Pipeline Safety be altered by the addition of language along the following lines:

"Develop procedures which insure adequate investigation of pipeline accidents and systems for the *current* reporting by state agencies and industries of significant accidents and incidents subject to safety regulation and accident prevention activities."

2. The Board recommends that steps be taken to open up lines of communication with all state regulatory agencies having jurisdiction over natural gas pipelines so that such agencies would:

(1) make available currently to the Department reports of the facts and circumstances surrounding accidents and incidents investigated by them, and

(2) institute procedures for reporting accidents and incidents to the Department on a current basis.

(Pipeline Accident Report, Low-Pressure Natural Gas Distribution System, Gary, Ind., June 3, 1969)

FEBRUARY 11, 1970.

Notation 343

BSTS-70-P-1 to 11

To Office of Pipeline Safety:

1. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation conduct a study to determine the feasibility of requiring that pressure regulators in series be placed in separate vaults or buildings for protection against fires and explosions, and determine the minimum distance of separation of regulators.

2. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that before valves separating gas systems of different pressures are operated, gauges be tapped in on both sides of the valve so that changes in pressure before, during, and after operation of the valves can be determined.

3. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a specified minimum safe distance between a regulator and its shutoff valve, and a requirement that emergency shutoff valves be placed in underground valve boxes or other readily accessible locations separate from regulator vaults or enclosures.

4. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that gas companies establish educational programs to enable customers and the general public to recognize gas emergency situations and, further, to provide necessary information to notify companies immediately.

5. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation use the corrosion standards of the National Association of Corrosion Engineers entitled "Control of External Corrosion in Underground or Submerged Metallic Pipeline Systems" as a guideline in formulating Federal standards.

6. The Safety Board recommends that the Office of Pipeline Safety conduct a study to determine the feasibility of requiring gas shutoff valves on all services, located outside of buildings in readily accessible locations for use in emergencies. Further, use the results of such study in formulating Federal standards and in consultations with the States in connection with their standards for existing systems.

7. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that relief devices be provided for low-pressure distribution systems which could be over-pressured by interconnected high-pressure gas. It is not intended that this recommendation apply to high-pressure gas connected to a low-pressure system by means of a regulator station provided with a suitable device to prevent accidental overpressuring.

8. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that surveys be made of existing systems to determine the extent of corrosion damage and to replace or further cathodically protect those facilities founded corroded beyond a special minimum and, further, use the National Association of Corrosion Engineers standard as a guide.

9. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that existing regulator stations be upgraded to comply with the USAS B31.8 standards for newly constructed regulator stations.

10. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards a requirement that a leakage survey, as presently defined in section 825.21 of USAS B31.8, be conducted prior to conversion of low-pressure distribution systems to higher pressure systems; also, that such surveys be conducted at one or more pressure increments and, finally, after the desired pressure has been attained.

11. The Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation include in its proposed standards the requirement that all gas utilities use written plans for conversions of low-pressure distribution systems to higher pressure.

(Letter to Secretary Volpe recommending OPS take certain action as a result of the Houma, La., pipeline accident of January 29, 1970)

MARCH 12, 1970.

BSTS-70-P-28

To Secretary of Transportation:

28. The National Transportation Safety Board recommends that the Office of Pipeline Safety contact each municipal gas system under its jurisdiction to explain clearly the requirements of the Act and previously distributed notices so that no misunderstanding exists. Such notification could be by letter, either registered or certified, to the responsible official of the city, such as the Mayor or city attorney, addressed by name. An acknowledgement from each municipality that it understands its obligations should also be considered.

(Pipeline Accident Report, Low-Pressure Natural Gas Distribution System, Burlington, Iowa, November 6, 1969)

DECEMBER 14, 1970.

504

BSTS-70-P-29 to 32

To Office of Pipeline Safety:

29. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation require in the minimum Federal Safety Standards that each gas utility establish a program for the prevention of construction-originated damage to its underground facilities. This program should contain provisions: (1) for education and general liaison with contractors and their machine operators; (2) for obtaining notices of construction work in close proximity to underground gas facilities; (3) to insure that gas facilities are marked or otherwise protected during such construction work; and (4) to followup and investigate accidents which do occur, to determine where the program failed and how it can be strengthened.

30. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation as part of its enforcement activity, study the regulator design, maintenance, and testing procedures of the utilities under its direct jurisdiction including municipal operations not regulated by States, to determine whether gas consumers will be properly protected against over-pressurization in the event of a malfunction of a primary regulator. This would include sampling observations to determine whether regulators are adjusted properly, maintained, and tested on a regular basis so that they will function correctly, and whether the control line is protected from damage.

31. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation conduct a study to determine what constitutes a safe maximum operating pressure for low-pressure distribution systems. Further, use the results of such study in formulating minimum Federal Safety Standards, so that the desired pressure and the correct functioning of monitoring regulators and other overpressure protection devices will be defined.

32. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation review the ability of the gas utilities under its direct jurisdiction to receive and process telephone calls during emergencies. Determine whether a minimum Federal Safety Standard is necessary.

Pipeline Special Study—Effects of Delay in Shutting Down Failed Pipeline Systems and Methods of Providing Rapid Shutdown)

FEBRUARY 12, 1971.

541

BSTS-71-P-1

To Office of Pipeline Safety:

1. The National Transportation Safety Board recommends that the Office of Pipeline Safety conduct a study to develop standards for rapid shutdown of failed natural gas pipelines and work in conjunction with the Federal Railroad Administration to develop similar standards for liquid pipelines.

(Letter to Assistant Secretary of Transportation regarding gas pipeline accident in Farmington, W. Va., on October 29, 1970)

MARCH 15, 1971.

853

BSTS-71-P-3 to 5

To Department of Transportation:

The National Transportation Safety Board recommends that the Department of Transportation take the necessary steps to determine whether there is a hazard within the meaning of Section 3(b) of the Natural Gas Pipeline Safety Act of 1968.

The National Transportation Safety Board recommends that the Department review the overall problem of safety of pipelines in areas where mine subsidence exists.

The National Transportation Safety Board recommends that the Department of Transportation issue regulations which will tend to prevent the occurrence of catastrophic accidents which result from the unauthorized operation of valves by persons other than utility company employees.

(Pipeline Accident Report, High Pressure Natural Gas, Pipeline, Mobil Oil Corp., Houston, Tex., September 9, 1969)

OCTOBER 4, 1971.

634

BSTS-71-P-7

To Office of Pipeline Safety:

7. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation take the following actions:

(a) Review the methods used by pipeline operators to protect existing transmission lines against accidental overpressuring upon the failure of pressure control equipment. This review should be made in conjunction with the States. If problem areas are detected, adequate regulatory action, including rulemaking, should be undertaken to assure protection against overpressuring.

8. The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation take the following actions:

(b) Clarify the Federal regulations pertaining to the determination of maximum allowable operating pressure for existing pipelines so that the joint factor in use when the pipe was manufactured is utilized for current computations.

Senator HARTKE. Mr. Joseph C. Swidler, chairman of the New York State Public Service Commission and representative, also, of the National Association of Regulatory Commissioners. With him will be Mr. George Bonner, director of the New York Public Service Commission's Gas Division; A. A. Mazzei, Jr., assistant counsel for the West Virginia Public Service Commission; and Mr. Paul Rodgers, NARUC general counsel.

Welcome back to Washington, Mr. Swidler.

STATEMENT OF JOSEPH C. SWIDLER, CHAIRMAN, NEW YORK STATE PUBLIC SERVICE COMMISSION, AND REPRESENTATIVE, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS; ACCOMPANIED BY GEORGE BONNER, DIRECTOR, NEW YORK PUBLIC SERVICE COMMISSION'S GAS DIVISION; A. A. MAZZEI, JR., ASSISTANT COUNSEL, WEST VIRGINIA PUBLIC SERVICE COMMISSION; AND PAUL RODGERS, NARUC GENERAL COUNSEL

Mr. SWIDLER. Thank you, Senator.

In view of your introduction, Senator Hartke, I shall not further introduce the people at this table.

The Natural Gas Pipeline Safety Act of 1968 provides for federally established minimum gas safety standards for interstate gas pipelines, for local gas transmission lines, and for distribution lines.

A State remains free to regulate the safety of gas distribution systems and local gas transmission lines, provided that the State adopts the Federal safety standards or imposes more rigorous standards and has the ability effectively to enforce its standards.

The act provides for Federal grants-in-aid to the States to support State safety regulation programs. The States are prohibited, however, from regulating the safety of interstate gas pipelines.

S. 1910 would accomplish two purposes; first, to improve the Federal grants-in-aid program for more effective State gas safety regulation and, second, to facilitate State safety regulation by allowing the States to use their judicial powers to impose injunctive and monetary sanctions whenever there is noncompliance with State gas safety codes. Both purposes are in the public interest and we urge enactment of S. 1910. I shall return to these issues in more detail later.

First, however, I must turn to another and more urgent matter which is not covered in any pending bill.

The New York Public Service Commission and the National Association of Regulatory Commissioners urge that Congress restore as soon as possible the States' authority to protect their citizens from the safety standards of interstate gas pipelines. I am appending as attachment I, and I would like to have made a part of the record of this hearing, the resolution adopted by the 82d NARUC Annual Convention on November 19, 1970, calling on Congress to amend the Natural Gas Pipeline Safety Act of 1968 to make clear that Federal safety standards will not preempt the States from requiring higher standards of gas pipeline safety and, as attachment II, drafts of proposed amendments to achieve this vital purpose.

Let me speak first of the urgent need for State safety regulation of interstate gas pipelines. It is well exemplified by comparing some accidents which took place in the State of New York.

On October 15, 1971, Consolidated Gas Supply Corp., an interstate gas pipeline supplying New York and other States, suffered the failure of a relief valve in Schenectady, N.Y. Natural gas was vented into the atmosphere at high pressure for more than 30 minutes. The police evacuated residents from many homes in the area.

By good fortune only, there were no deaths, injuries or damage to property, but the incident could easily have triggered a major disaster. Explosive amounts of gas could have migrated undetected throughout the area because the gas was not odorized.

New York State's gas safety regulations require that the gas be odorized, but the Natural Gas Pipeline Safety Act makes our regulations inapplicable to interstate gas pipelines even where the lines run through cities. By contrast, the local gas distribution system in Schenectady, which parallels and crosses the interstate pipeline, is required by the State code to odorize its gas.

The Federal standards free interstate pipelines from the requirement to odorize their gas as of January 1, 1972, or when distribution companies in the States served by the pipelines are fully equipped to odorize the gas, whichever comes first.

Although the office of pipeline safety is considering the matter further, Consolidated Gas has interpreted the Federal standard as relieving it from any obligation to odorize its gas because the distribution companies it serves in New York are fully equipped to odorize their own gas.

We previously appealed to Consolidated Gas to odorize the gas as a voluntary contribution to safety, but it refused.

On January 18, 1971 the New York State Public Service Commission wrote to the acting director of the office of pipeline safety asking for assistance. He reported to us Consolidated Gas' continued refusal to odorize.

OPS informally advised us, if we understand its views correctly, that the Federal code requires odorization only until January 1, 1972, or until all distribution systems in the State—not just those served by Consolidated Gas—can odorize their gas, whichever comes first.

It happens that a small fraction of the gas in New York now depends on pipeline odorization, certain distribution companies not having sufficient equipment at present to odorize a portion of the gas they distribute.

On the basis of this technicality—we thought for the time being we had that jurisdiction—we again wrote OPS on April 16 asking that Consolidated Gas be directed to odorize. However, nothing has been done by either OPS or Consolidated Gas in this regard.

There was another potentially serious leak in the Albany area. This gas had been odorized by a different pipeline which transmitted the gas to Consolidated in an exchange. Here we were dealing with odorized gas. In this case the leak was detected immediately because the gas was odorized, and serious danger was avoided in contrast with the Schenectady incident where gas was not odorized and amounts were released into the atmosphere and could have migrated and could have exploded.

In still another instance a leak from a high pressure interstate gas pipeline was detected at a point where an interstate line crosses the New York State thruway near a highway service area. Had this gas not been voluntarily odorized the leak might easily have gone undetected and a serious accident might have ensued.

While I have emphasized the odorization issue, there are many other shortcomings in the Federal code which I shall mention later that may well lead to death and wide damage.

Natural gas is an extremely dangerous commodity if it is not handled with the greatest of care. If a catastrophe occurs in New York because the Federal minimum safety standards for interstate pipelines are less rigorous than the standards the State imposes on comparable local transmission lines, the blame for the catastrophe will rest squarely on the Federal Government.

Gas safety practices and regulations must take account of local conditions such as existing and potential population densities, construction and industrial activity, terrain, and soil conditions.

The Natural Gas Pipeline Safety Act recognizes the importance of local considerations. It allows the States to assert and enforce more rigorous safety standards than the Federal minimum standards for distribution systems and local transmission lines. Yet the act prohibits States from regulating the safety of interstate gas pipelines even though the interstate lines often operate at higher pressure, transmit much greater volumes of gas, are potentially far greater hazards, and often run through population centers and parallel or cross local distribution systems and transmission lines.

There is no justification for the distinction. If anything, the interstate pipelines offer the greater hazard because, as I said, they are typically under higher pressure and transmit greater volumes. The act

is wrong in this respect and should be amended to end this disabling and senseless prohibition.

Nationally uniform Federal minimum standards for interstate gas pipelines will be either inadequate in more populous States or—if appropriate there—will be unduly rigorous and costly for more open territory.

I can conceive of a detailed Federal gas safety program that takes direct account of local considerations appropriate to each State and locality, but that is not the kind that we have nor is it the kind that we are likely to get.

That kind of Federal program, however, either would be massively duplicative of State programs, which are necessary to regulate distribution systems and local transmission lines in any event; or else that type of particularized Federal program would be almost entirely dependent on following the initiative of the States, in which case there seems to be no propriety in preempting the States. The Office of Pipeline Safety has chosen the first course, establishing a nationally uniform set of “minimum” standards for interstate gas pipeline safety that are not sufficient for many areas in New York and elsewhere, where more intensive safety precautions are necessary. These are called “minimum” standards because the interstate pipeline companies are free to exceed them in their discretion. Insofar as the States are concerned, they are maximum standards.

I have already referred to the failure of the Federal code to require odorization. Let me mention some other deficiencies in the Federal code.

For one thing, it does not set standards for certain gathering lines owned by interstate pipelines which we in New York could regulate if they were owned by others but may not regulate when they are owned by interstate pipeline companies.

The New York State code requires a 24-hour pressure test for new high-pressure lines and the repair of all leaks before operation. The Federal code requires only an 8-hour test for high-pressure lines and the repair of “hazardous leaks” before operation, a potentially lethal leniency in the Federal code.

For another example, the New York State code classifies a line which operates at a pressure of 125 pounds per square inch gage or more as a high-pressure transmission line while the Federal code uses a different standard of “hoop stress,” where a line is characterized as high pressure only if it operates over a 20-percent hoop stress.

A line operating in New York City, known as the New York Facilities Line, which is owned by the three New York City distribution companies, operates at 275 pounds per square inch gage but at less than 20-percent hoop stress. Luckily for the residents of New York City the line is not an interstate pipeline and is subject to the safety jurisdiction of the New York State Public Service Commission.

If the line were sold to an interstate pipeline company it would be subject to the very meager Federal safety standards for low-pressure lines, less rigorous than the Federal code’s own standard for many interstate pipelines operating in rural areas at pressures as low as 350 pounds.

Furthermore, the line would be free to discontinue odorization by January 1, 1972, if not sooner, under the Federal code, despite the

fact that the New York Facilities Line transports huge amounts of gas at high pressure only a few feet below the streets and sidewalks of Manhattan. And I might say Manhattan is honeycombed with tunnels and other underground installations which make possible such migration. It is a very serious problem underneath New York City.

We endorse the act insofar as it calls for federally-established minimum safety standards for all gas systems. For safety sake, however, there is no justification for prohibiting the States from establishing local standards more rigorous than the Federal minimum for interstate gas pipelines.

The reasons for preempting the States are not safety reasons. They are purely economic. The intent is to prohibit the States from interfering with interstate commerce.

The act is ill-conceived for this purpose. We know of no State that is attempting or has attempted to impede the construction of an interstate gas pipeline. On the contrary, all of the States are eager for the most possible sources of supply and the greatest possible volumes of gas.

Even pipelines intending only to pass through a State give rise to the opportunity for local gas supplies, because section 7(a) of the Natural Gas Act entitles communities to apply to the Federal Power Commission for gas service from nearby pipelines.

The key to our plea for a State voice on the safety of interstate pipelines within their jurisdiction is that there is no need for uniformity of gas safety rules for interstate lines in order to assure orderly interstate commerce. The pipe itself does not move.

If one State requires pipeline wall thickness of specified dimensions the utility can comply in that State and still meet different standards in adjacent States with no difficulty.

The only thing that moves across State lines is the gas itself. The only applicable safety standards regarding the gas itself concern pressure and odorization. Pressure can be choked down in one State or locality and can be built up elsewhere through compressors. With regard to odorization, all localities do or should require odorization so it is no interference to require the supplying pipeline to odorize the gas—unless the gas is destined for storage—odorants damage storage reservoirs. In that case there should be an exemption.

Uniform safety standards among the States are not necessary for interstate gas commerce in order to avoid burdening this commerce.

I would like to tell you something, Senator Hartke, about our own program in New York. We are not satisfied with the safety of gas distribution systems and transmission lines in New York State.

Since I took office February 1, 1970, the gas division of the public service commission, under the direction of George Bonner who is here with me, has moved to improve the State's safety code which has recently been revised and is under study for further amendment, and has moved to improve its inspection and enforcement efforts.

New York State has pioneered in the development of regulations for the isolation and retirement of idle services from gas systems. The office of pipeline safety is now in the process of considering and adopting rules along these lines.

The New York State Public Service Commission recently issued an order requiring the installation of valves on new service lines to pre-

vent gas from prematurely entering building as a result of the accident to which the prior witness alluded. The office of pipeline safety is now considering the adoption of that rule.

New York State also pioneered in regulations governing cathodic protection of distribution systems, which is the diverting of electrical interchanges between the pipe and the ground, thus mitigating the deterioration of the pipe metals.

Regulations just issued by the Office of Pipeline Safety correspond closely with regulations we issued concerning cathodic protection.

We are drafting an improved classification system for detected gas leaks which may help set repair priorities that will save lives. We hope to interest OPS also in this system.

We shall strive for continuing leadership because we realize the hazards involved and the very great responsibility for the safety of distribution systems and local transmission lines in a State with almost 10 percent of the national population.

I point out our leadership only to make clear that our appeal is not merely on States' rights principles, but rather it grows out of the need and the capability within New York to add measurably to the safety of interstate gas transmission.

The citizens of New York, and other States, cannot wait for Federal standards to catch up with safety needs that are recognized by the States.

Several States have demonstrated they are willing and able to set rigorous safety standards. Federal laws should not deprive them of the right to impose more rigorous standards than the Federal minimums in order to protect their citizens from safety hazards of interstate gas pipelines.

State enforcement and assessment.—The Natural Gas Pipeline Safety Act prohibits the States from enforcing any gas safety regulations governing interstate gas pipelines, either its own or those of the Federal Government—*United Gas Pipeline Company v. Terrebonne Parish Police Jury*, 319 F. Supp. 1138 (1970).¹ All that the States may do with regard to interstate gas pipelines is act as the agent of the Federal Government, by agreement, to exercise surveillance over the safety programs of the pipelines. Upon discovery of a violation of the Federal code, neither the State inspector nor the State commission may require compliance, but can only report to Washington that the pipeline has not complied with the Federal code. It is then up to the Department of Transportation to conduct its own investigation to determine if in fact a violation has taken place. Defects resulting from noncompliance associated with construction practices or underground equipment would have been long buried before anyone could arrive on the scene from Washington. The Office of Pipeline Safety had only 21 professionals during fiscal year 1971, including only two field inspectors, both of who are based in Houston, Tex., plus seven clerical personnel. Not all of these are assigned to interstate gas pipeline work. Some work on minimum standards for distribu-

¹ While that decision may be correct as a matter of statutory interpretation, we challenge the constitutionality of the Federal Government's effort to prevent the States from protecting their citizens against the safety hazards of interstate gas pipelines. Unfortunately, a lawsuit attacking the constitutionality of the Act in this regard would undoubtedly take time, during which the safety of our citizens would be inadequately protected. We therefore press for necessary remedial Federal legislation.

tion systems and local transmission lines, on administrative matters, and on other office chores. The State of New York alone now has a staff of 21 engineers and inspectors working full time on gas safety plus 31 others working partly on gas safety and partly on other gas matters.

Even the provision for State surveillance of interstate gas pipeline safety practices, circumscribed as it is, has been frustrated by the interpretations of the Office of Pipeline Safety concerning State financing of the safety measures. According to OPS, the States must bear the entire cost of their safety inspections of interstate gas pipelines on behalf of the Federal Government. On October 30, 1970, the Acting Director of the Office of Pipeline Safety advised all State agencies that they no longer had authority to assess interstate pipeline companies to defray part or all of the State's costs of safety inspections and surveillance, even if such assessments could be made with respect to distribution systems and local transmission lines. As a result, New York and Pennsylvania have terminated their agency relationship with OPS, so that there is no longer any effective safety program for interstate gas pipelines as a practical matter in these populous States. It passes my understanding why OPS is insistent that the prevailing assessment practices of the States should not be applied to interstate pipelines. To require the legislatures to establish a special financial arrangement for this safety service seems totally unreasonable. Many other States may be forced to follow suit.

It is becoming increasingly difficult if not impossible for States to increase taxes to pay for surveillance over interstate gas pipelines, taxes that would be especially difficult to justify since there is no opportunity for direct State enforcement and there are correspondingly reduced benefits in terms of improved safety. The restoration of the States' authority to assess pipelines is essential.

S. 1910 goes part way. OPS has viewed State surveillance programs for interstate gas pipelines as not eligible for Federal matching grants-in-aid, and section 3 of S. 1910 would amend the Act to extend the grants-in-aid program to cover such surveillance programs. While we support that amendment to help those States that might take advantage of it, it will cover 50% of the costs, at most. I am sure that many States will be unable to carry on a surveillance program for interstate gas pipelines unless they are authorized to assess the pipelines for the remaining costs that would be borne by the States.

The statutory amendments we propose in attachment II would strike from the act the prohibition against the States' asserting and enforcing rigorous safety programs for interstate gas pipelines. Those amendments would, by restoring the States' general authority, eliminate any basis for OPS's extraordinary ruling that the States may not assess interstate gas pipelines for safety efforts related to those pipelines. If Congress decides not to restore general safety authority to the States, it must at least amend the act to make clear that States may use their assessment powers to cover the State surveillance programs that are now expressly authorized in act. In the absence of State assessment at least for surveillance, all hopes for achieving interstate gas pipeline safety may collapse.

S. 1910: IMPROVEMENTS IN STATE REGULATION OF INTRASTATE GAS SYSTEMS

Judicial sanctions. S. 1910 would improve the Natural Gas Pipeline Safety Act by clarifying the enforcement authority of the States. The act now provides that State safety standards for distribution systems and local transmission lines are effective only if they are enforceable by injunctive and monetary sanction "substantially the same" as certain Federal sanctions. The Department of Transportation has erroneously interpreted the act as disqualifying State gas safety programs unless the State safety agency (like the Federal Office of Pipeline Safety) possesses authority to impose injunctive and monetary sanctions. The Department of Transportation apparently concedes that some States have adequate judicial processes for injunctive and monetary sanctions, which the State agency could pursue through State courts. Nevertheless, the Department of Transportation deems these judicial sanctions statutorily inadequate because not "substantially the same" as the Federal sanctions.

Section 2 of S. 1910 would relieve everyone of the burden of this narrow reading of the act by inserting "or the courts of the State" in the provision calling for State sanctions. Many States have already acted to give their agencies injunctive and monetary sanction powers meeting the tests of the Federal act as interpreted by OPS. Nevertheless, S. 1910 will enable at least a few other States to qualify under the act, States which are now barred from asserting and enforcing their otherwise acceptable State gas safety programs. The States would be free under S. 1910 to decide whether the agencies or the courts or both are qualified to impose sanctions.

Grants-in-aid. S. 1910 would also strengthen the State gas safety programs by clarifying and improving the Federal grants-in-aid program. Section 3 of S. 1910 would make clear that grants-in-aid money may be made available for State work on the safety of interstate pipeline facilities as well as on State safety regulation of distribution systems and local transmission lines.² Section 4 of S. 1910 would require that the Secretary of Transportation certify his apportionment of funds well before the commencement of each fiscal year. This important amendment will, for the first time under the act, make known to the States the extent of their entitlement before the State legislatures have appropriated their own money for State gas safety programs. The timing is crucial because the Federal grants-in-aid are limited to 50 percent of the cost of the State program. Even if a State would otherwise be entitled to a \$50,000 grant, a State safety program that costs \$80,000 would be entitled to only a \$40,000 grant. Only if the States know in advance the amount of grants-in-aid they might receive will they be able to take full advantage of the Federal funds intended for the States; and only in that way will the Federal program draw in the maximum possible State investment in safety.

Section 5 of S. 1910 amends the grants-in-aid program in other salutary ways. It provides for progress payments to the States out of the Federal fund as State gas safety programs are enforced.

² The Department of Transportation supports this aspect of S. 1910, but only this aspect. See the letter from Department of Transportation General Counsel John W. Barnum to Chairman Warren G. Magnuson of the Senate Committee on Commerce, dated September 29, 1971.

S. 1910 unfortunately does not address the issue of funding the grants-in-aid program. Since adequate funding of State enforcement agencies is crucial to the success of the National Gas Safety Program, we urge that section 14 of the act be amended to require the Department of Transportation to analyze the financial needs of these State agencies and to present the results of such analysis in its report for the calendar year 1972 so that Congress may then establish an adequate grants-in-aid fund. A proposed amendment to this effect is contained in attachment IV.

Other pending bills. S. 1910 is preferable to the other pending bills, S. 980 and H.R. 5065. The other two bills do not contain the several improvements in the Federal grants-in-aid program reflected in S. 1910. Also the other two bills fail to allow the States to keep their injunctive and monetary sanction powers in the hands of their courts.

Section 1 of H.R. 5065 would extend until August 12, 1972, the time for States to make their monetary and injunctive sanctions substantially the same as the Federal sanctions. This amendment is important whether or not Congress decides to allow the States to pursue their sanctions through State courts instead of State safety agencies. Unless the State sanctions were substantially the same as the Federal sanctions by August 12, 1970, the State safety programs are inoperative. For example section 9 of the act provides for a \$1,000 Federal penalty for each safety violation for each day that the violation persists, with a maximum penalty of \$200,000 for a related series of violations. If the State monetary penalty is not substantially the same as this Federal penalty, the State may not regulate gas safety. I suppose it would have been best if all the States had conformed their sanctions by now. However, the Federal Government is not now adequately staffed to take over State programs. It would appear necessary to delay the time when a State safety program becomes inoperative because of differences between State sanctions and the Federal sanctions. Without that delay there may be no effective gas safety programs in several States. S. 1910 should therefore be amended to provide that section 5(a) of the Natural Gas Pipeline Safety Act (49 U.S.C. 1674(a)) be amended by striking out "2 years" and inserting in lieu thereof "4 years," extending the time for compliance to August 12, 1972.

I should note in favor of H.R. 5065 that section 2 of that bill would amend the act to make grants-in-aid mandatory to the extent funds are appropriated. H.R. 5065 would change the phrase "the Secretary is authorized to pay" to "the Secretary shall pay." S. 1910 would be improved by that change of phrase.

I should also note that S. 1910 leaves blank in section 4 the amounts of the grants-in-aid fund. Section 3 of H.R. 5065 authorizes amounts for the entire Federal program that we doubt are sufficient for the grants-in-aid fund alone (\$3,000,000 for the fiscal year ending June 30, 1972; \$3,800,000 for the next fiscal year; and \$5,000,000 for the next fiscal year). The amount of authorization should be determined after a more thorough analysis has been made of the financial needs of State safety programs. In attachment II we propose an amendment to require a prompt study of these important financial considerations.

We strongly urge enactment of S. 1910, changed to make the grants-

in-aid payments mandatory, to extend the time for State compliance with the act's requirements concerning sanctions, and to require a prompt study of the amount of grants-in-aid needed for the succeeding fiscal years. I am appending further remarks (attachment III) adapted from the prepared testimony of George I. Bloom, past president of the National Association of Regulatory Utility Commissioners and Chairman of the Pennsylvania Public Utility Commission, before the House Subcommittee on Communications and Power of the Committee on Interstate and Foreign Commerce, concerning State judicial sanctions and improvements to the grants-in-aid program.

This concludes my formal presentation, Mr. Chairman.
(Attachments follow:)

ATTACHMENT I

RESOLUTION RE SAFETY OF INTERSTATE PIPELINES

Whereas the United States Department of Transportation has issued regulations, effective November 12, 1970, establishing nationwide standards concerning the safety of interstate pipeline; and

Whereas such standards were promulgated over the vigorous objection of State agencies that they were weak and inadequate, and fell below the requirements of a number of the States, in particular because they failed to require either odorization or cathodic protection; and

Whereas the Natural Gas Pipeline Safety Act purports to preempt the States from imposing more rigorous standards, despite the fact that such standards are denominated as "minimum standards," and thus raises a grave constitutional question as to the police powers of the States with respect to safety; and

Whereas the inadequacy of the Federal standards imposes serious risks of catastrophes, especially where pipelines traverse heavily populated areas; and

Whereas the National Association of Regulatory Utility Commissioners has historically taken the position that the Federal standards should be minimum standards and that the States should be free to impose stricter standards as required by local conditions: *Be it*

Resolved, That the National Association of Regulatory Utility Commissioners recommends and endorses the following actions:

(1) That the Department of Transportation be urged to revise its said regulations so as to protect the public safety, particularly with regard to odorization and cathodic protection;

(2) That NARUC supports the action of any State or States which challenge the validity of the said regulations in depriving the States of the right to require a higher degree of safety protection than afforded by the Federal standards;

(3) That NARUC attempt to secure an amendment of the Natural Gas Pipeline Safety Act which would make clear that the Federal standards do not preempt the States from requiring higher standards of pipeline safety; and

(4) That copies of this resolution be sent to the Secretary of Transportation and to the respective chairmen of the Senate and House Commerce Committees of the Congress of the United States.

Adopted November 19, 1970, by the Eighty-second NARUC Annual Convention.

ATTACHMENT II

PROPOSED AMENDMENT TO NATURAL GAS PIPELINE SAFETY ACT TO RESTORE AUTHORITY OF STATES TO REGULATE SAFETY OF INTERSTATE GAS PIPELINES

The Natural Gas Pipeline Safety Act of 1968 is amended as follows in order to restore to the States their authority to regulate the safety of interstate gas pipelines:

Strike the phrase "not subject to the jurisdiction of the Federal Power Commission under the Natural Gas Act" in the last sentence of section 3(a),

in the last sentence of section 3(b), the first sentence section 5(a), twice in the first sentence of section 5(b), in the first sentence of section 5(d), and in the first sentence of section 11.

In section 3(a) strike the phrase at the end of the section: "but may not adopt or continue in force after the interim standards provided for above become effective any such standards applicable to interstate transmission facilities".

In section 3(b) strike the phrase at the end of the section: "but may not adopt or continue in force after the minimum Federal Safety Standards referred to in this subsection become effective any such standards applicable to interstate transmission facilities".

In the fourth sentence of section 3(e) insert at the end of the phrase "the Secretary objects in writing to the granting of the waiver" the following: "as incompatible with the Federal minimum standards".

In section 5(a), item (2), insert after "has adopted each Federal Safety Standard" the following: "or more stringent standards".

In the second sentence of section 10(a) change "an action" to a "Federal action".

ATTACHMENT III

FURTHER REMARKS ON COURT SANCTIONS AND GRANTS-IN-AID, ADOPTED FROM THE TESTIMONY OF GEORGE I. BLOOM, FORMER PRESIDENT OF NARUC AND CHAIRMAN OF THE PENNSYLVANIA PUBLIC UTILITY COMMISSION, ON MARCH 9, 1971, BEFORE THE HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE SUBCOMMITTEE ON COMMUNICATIONS AND POWER, H.R. 5065

Court Imposed Injunctive and Monetary Sanctions

One facet of Section 5(a)(4) of the Act [49 U.S.C.A., Sec. 1674(a)(4)] has created a conflict of interpretation between the State agencies and the Office of Pipeline Safety of the Department of Transportation. Section 5(a) provides, as one of the conditions for State certification, that:

"... the law of the State makes provision for the enforcement of the safety standards of such State agency by way of injunctive and monetary sanctions *substantially the same as* are provided under sections 9 and 10; except that a State agency may file a certification under this subsection without regard to the requirement of injunctive and monetary sanctions under State law for a period not to exceed two years after the date of enactment of this Act." (Emphasis supplied.)¹

The Office of Pipeline Safety has interpreted the phrase "substantially the same as" to mean that a state agency *itself* must possess the authority to fix and compromise penalties against gas companies committing safety violations.

Traditionally, many States have reserved such authority for exercise by the judiciary and not regulatory agencies. This certainly appears to be a permissible policy decision when we consider that the judiciary is the ultimate guardian of the rights of the people and that some State agencies may not be appropriately staffed for this function.

Irrespective of the enormous responsibility placed upon the judiciary under our system of government, and the excellent record it has made in meeting this responsibility since the establishment of our government, the Office of Pipeline Safety has determined that the judicial fixing of penalties is inadequate.

Many States have attempted to change their laws to conform with DOT's interpretation during the two year period specified in Section 5(a) which expired on August 12, 1970. However, thus far the Office of Pipeline Safety has determined that the laws of only 38 States, the District of Columbia and Puerto Rico satisfy its imaginative interpretation regarding monetary sanctions and other requirements. It has determined that the laws of the following 12 jurisdictions are inadequate and, therefore, require amendment: Connecticut, Delaware, Hawaii, Louisiana, Massachusetts, Minnesota, Nebraska, New Jersey, North Dakota, Ohio, Pennsylvania and Rhode Island.

Furthermore, we believe that the legislative history of the Natural Gas Pipe-

¹ The Act was signed by the President on August 12, 1968.

line Safety Act indicates the acceptability of judicially imposed monetary sanctions for certification purposes.

When S. 1166 (90th Cong.) passed the Senate and was referred to the House Committee on Interstate and Foreign Commerce on November 13, 1967, Section 5(a) provided that the primary means of State participation under the Act would be by means of an agreement entered into between a "State agency" and the Secretary of Transportation. Section 5(a) provided in part that "No such agreement may be concluded with any State agency which does not have the authority (i) to impose the sanctions provided under sections 9 and 10 . . .". Section 9 provided for a maximum civil penalty of 1,000 dollars for each day a violation continued with a maximum penalty of 400,000 dollars for a related series of violations.

The NARUC testified before this Subcommittee on S. 1166 and related bills on February 27, 1968. In Appendix B (pp. 7-8) to its written statement filed with the Subcommittee on that day, the NARUC pointed out that:

"Section 5(e) further provides that the Secretary cannot contract with a State commission which does not have the authority to impose a civil penalty of \$1,000 per day violation and to enjoin violations. Most, if not all, of the State commissions do not possess such authority, and it is doubtful if most could be so authorized because State constitutions frequently reserve such judicial remedies for exclusive exercise by the courts.

"Consequently, we recommend that Section 5(e) be amended to include sanctions imposed by both State commissions and courts and, further, that where State law does not permit the imposition of such sanctions an agreement may nevertheless be executed with the understanding that the civil penalty and injunctive relief prescribed by S. 1166 would have continued application in the State."

These views were reiterated in a letter of the NARUC General Counsel, dated March 19, 1968, which responded to a letter from the Chairman of the Subcommittee inquiring as to the State agencies, if any, which were empowered to impose the civil penalty sanctions referred to in Section 5(a) (3) (i) of S. 1166. The text of this letter is reported in the *Hearings before the Subcommittee on Natural Gas Pipeline Safety, 90th Congress (Serial No. 90-28)*, p. 336.

The House Committee on Interstate and Foreign Commerce on May 15, 1968, favorably reported S. 1166 with amendments. *House Report No. 1390, 90th Congress*. The Committee version of S. 1166 passed the House without amendment.

The House version of S. 1166 revised Section 5(a) to establish the "certification" concept as the primary means of State participation under the Act. More specifically, the revised Section 5(a) provided that the Act generally would not apply to intrastate facilities within a State when the safety standards applicable to them are regulated by a "State agency" which:

" . . . submits to the Secretary an annual certification that such State agency (1) has regulatory jurisdiction over the safety standards and practices such pipeline facilities and transportation of gas; (2) has adopted each Federal safety standard applicable to such pipeline facilities and transportation of gas established under this Act as of the date of the certification; (3) is enforcing each such standard; and (4) has the authority to require record maintenance, reporting, and inspection substantially the same as are provided under section 12 and the filing for approval of plans of inspections and maintenance described in section 11; and that *the law of the State makes provision for the enforcement of the safety standards of such State agency by way of injunctive and monetary sanctions . . .*" (Emphasis supplied.)

Obviously, a comparison of this language with the Senate version of Section 5(a) demonstrates that the House intended that judicially imposed penalties would be acceptable for certification purposes.

This conclusion is supported by the following comment from House Report No. 1390, pp. 28-29:

"In the course of the hearings before the committee it was pointed out that whereas a condition precedent to a written agreement was that the State agency has authority to impose the penalties provided under section 9 and seek the injunction relief provided by section 10, must State agencies did not have such authority as to penalties, although most of them could seek enforcement through injunctions (see app. B). It thus appeared that some amendment to section 5(a) must be made if any such State enforcement program were to be initiated

"In the bill as reported, the committee incorporates the results of its consideration of the need to amend the agreement conditions and alternative proposal.

"The language adopted by the committee indicates a reaffirmation of the intent that State law and State enforcement replace the Federal law for local facilities where the State agency has undertaken conscientiously and effectively to adopt and enforce the Federal standards."

Upon consideration of S. 1166 by the Conference Committee (House Report No. 1795, p. 12, 90th Congress) the conferees agreed upon a substitute which:

"... retain the certification procedure of the House amendment but provides that there be a condition precedent to State agency certification; namely that the law of the State make provision for injunctive and monetary sanctions "substantially the same as are provided under section 9 and 10." The conference substitute also adds a provision that a State agency may file a certification without regard to the requirement of injunctive and monetary sanctions under State law for a period of not more than 2 years after the date of enactment of this legislation."

The substitute version of S. 1166 was enacted by the Congress and signed by the President on August 12, 1968.

Since the Conferees adopted the House language stating that "the law of the State makes provision for the enforcement of the safety standards of such State agency by way of injunctive and monetary sanctions ..." (which encompassed the judicial imposition of sanctions), rather than reverting to the original Senate language which required that the State agency itself must possess the authority to impose such sanctions, we believe that the Congress clearly intended that judicially imposed sanctions would be acceptable for certification purposes.

We believe that the language added by the conferees to require that the State sanctions must be "substantially the same as provided under sections 9 and 10," was merely to insure that the level of penalties between the Federal and State laws would be substantially the same.

If a State agency is to be de-certified under the Act, we believe it should be for substantial cause such as its inability to effectively enforce the Federal minimum safety standards. To de-certify a State agency on frivolous grounds, such as for judicially imposed penalties, could easily mean a loss of effective State programs. Such a loss to public safety would be intolerable under any circumstances, and especially now when the Office of Pipeline Safety has a national field force of only two engineers based in Houston, Texas; the entire Office of Pipeline Safety includes only 21 professional and 7 clerical personnel.

In view of these considerations, the NARUC believes that the interpretation adopted by the Office of Pipeline Safety, which is contradicted by the legislative history, is bad policy because it minimizes the time-honored judicial role and because it will seriously impair the Federal-State safety program intended by the Congress.²

Accordingly, we respectfully urge that the Natural Gas Pipeline Safety Act be amended in the manner proposed in S. 1910 to clarify the Congressional intent as to the appropriateness of the judicial fixing of penalties for safety violations.

Modification of Grant-in-Aid Program

We believe that Section 5(c) of the Act should be amended to modify the administration of the 50-50 matching grant-in-aid program to assist the State commissions in their safety regulation. As a result of the timing of the State commission's application for funds and the calendar year basis of the existing grant-in-aid program, most State commissions will not know the amount of Federal funds they are entitled to receive in any year until after their State legislatures have made appropriations for that year. Under these circumstances, a State legislature could easily fail to appropriate sufficient State funds to fully match the Federal funds apportioned to the State and hence the unmatched part of the apportionment would lapse.

Enactment of the amendment set forth in Section 4 of S. 1910 would permit Congressional authorization of a specific amount of funds for a given fiscal year to be apportioned among the several States well in advance of such fiscal year. Under this concept, the Federal authorizing legislation would be enacted during

² Such an amendment is supported by the resolution adopted by the NARUC Executive Committee on July 22, 1970 (NARUC Bulletin No. 31-1970, p. 5). The text of the resolution is set forth in Appendix A to this Statement.

an even-numbered year, and the apportionment of funds to the States would be made before the close of that even-numbered year, so that the State legislatures (the vast majority of which meet during the odd-numbered years) would know the amount of State funds needed to match the apportioned Federal funds. The Federal-aid highway program is an outstanding example of the application of this concept.

The proposed amendment also contains a "contract authority" provision which means that when the Secretary of Transportation approves the gas safety program of a State commission, such approval "shall be deemed a contractual obligation of the Federal Government for the payment of its apportioned contribution thereto."³

The provision of adequate and timely financial assistance to State agencies, on a matching basis, will reduce the need for establishing a large Federal field staff and thereby permit the Congress to implement its national safety program for far less than what it would otherwise cost for the Federal Government to assume the entire financial burden. In other words, the use of matching funds would in effect pull State money into a Federal program.

APPENDIX A

RESOLUTION RE GAS SAFETY

Whereas in 1968 Congress enacted the Natural Gas Pipeline Safety Act of 1968, Public Law 90-481, 82 Stat. 720; and

Whereas by its terms said Act does not apply to facilities and the transportation of gas within a State when the safety standards are regulated by a State agency which annually certified to the Secretary of Transportation the matters and things set forth in the Act; and

Whereas many States have been unable to meet certification requirements within the time limits prescribed in the Act; and

Whereas the Department of Transportation in recognition of said fact is sponsoring legislation (S. 3763 and H.R. 17335) now before Congress which would extend the deadline for State compliance from August 12, 1970, to August 12, 1971; and

Whereas a State desiring to preserve its regulatory jurisdiction over safety standards and practices of pipeline facilities and transportation of gas within the State must, among other things, certify that the law of the State makes provision for the enforcement of State standards by way of injunctive and monetary sanctions "substantially the same as" provided in Sections 9 and 10 of the Act; and

Whereas the Department of Transportation has formulated the legal opinion that in order to meet the substantial similar tests set forth in the Act the State must vest the authority to impose monetary sanctions in the administrative agency charged with regulating gas safety as distinguished from the judiciary; and

Whereas certain State regulatory agencies are prohibited, either by constitutional limitations, by statute, or by judicial decision, from fixing and determining monetary sanctions, but instead must resort to the courts for such enforcement; and

Whereas the opinion of the Department of Transportation would appear to be a forced and erroneous construction of the Act, contrary to the intent of Congress to effect a workable Federal-State partnership in the matter of gas safety enforcement: Be it therefore

Resolved, That the Executive Committee of the National Association of Regulatory Utility Commissioners, having reviewed the proposed amendment to the Natural Gas Pipeline Safety Act of 1968 to extend the date for State compliance to August 12, 1971, as contained in S. 3763 and H.R. 17335, 91st Congress, hereby concurs in the objectives of these amendments; and

³ The proposed amendment, regarding the modification of the grant-in-aid program, formed a part of the NARUC proposed Natural Gas Pipeline Safety Act Amendment of 1969 which was introduced in the Ninety-first Congress as S. 1919 by Magnuson (D.-Wash.) and H.R. 12151 by Rooney (D.-Pa.). Representative Rooney on February 2, 1971, reintroduced this legislation in the Ninety-second Congress as H.R. 3324. Senator Magnuson on May 18, 1971, reintroduced the legislation as S. 1910.

Resolved further, That by appropriate amendment to S. 3763 or H.R. 17335 or other suitable means, the Natural Gas Pipeline Safety Act of 1968 be further amended to make it clear that judicially imposed monetary sanctions meet the substantial similar standards as set forth in Sections 9 and 10 of the Act; and

Resolved further, That the legal representatives of the Association are hereby authorized to appear before any committee of Congress on behalf of the Association at any hearing held on any bills desired to effect the amendments herein urged and to present the views of the Association as herein expressed; and

Resolved further, That the legal representatives of the Association are hereby instructed to send a copy of these resolutions to each member of the Senate and House Commerce Committees, the same being hereby requested to support these amendments.

Adopted July 22, 1970.

ATTACHMENT IV

PROPOSED AMEDMENT TO S. 1910 TO REQUIRE STUDY OF FINANCIAL NEEDS OF STATE SAFETY PROGRAMS

Section 14 of the Natural Gas Pipeline Safety Act of 1968 is hereby amended by adding at the end thereof a new subsection to read as follows:

"(c) The report for calendar year 1972 shall contain a special analysis showing: (1) the Gas Safety Program to be continued in each State; (2) annual projections of State agency needs for personnel, equipment and activities reasonably required to carry out the State's program during the period from 1973 through 1978; (3) the source or sources of State funds to finance the program; (4) the capability of each State to provide additional needed funds to finance the program without Federal assistance; (5) the amount of Federal assistance needed annually; (6) alternative methods of allotting Federal funds among the States that desire Federal assistance, including recommendations, if needed, and a statutory formula for appropriating Federal funds; (7) treatment of such other problems affecting cooperation among the Federal States as will assure continued and increased participation of State agencies in the program. The special analysis shall be prepared by the Secretary after consultation with the cooperating State agencies and shall include the observation of the National Organization of State Commissions with respect to the scope and content of the analysis and the recommendation therein."

Senator HARTKE. Thank you for your very thorough and informative statement, Mr. Swidler.

I take it you are not really impressed with OSP?

Mr. SWIDLER. We have not had a history. Senator Hartke, of general cooperation. The interpretations and the administration have all been on the basis of rigid and narrow interpretations which exclude the States from an effective role even though the language of the statute does not compel that interpretation on my reading.

OPS would be free to adopt interpretations which would go far to accomplish the safety goals of the statute. Instead of which their interpretations tend to prevent achievement of those goals.

Senator HARTKE. This question of taxation of interstate lines to defray safety inspections, do you know what precipitated the action by OPS and what has been the response of the States to that?

Mr. SWIDLER. I am sorry, Senator Hartke, I did not understand you.

Senator HARTKE. The Office of Pipeline Safety made a decision advising State agencies they could no longer tax interstate lines to defray the cost of safety inspections. Are you familiar with the details which led up to this decision, what precipitated it?

Mr. SWIDLER. No; I am not. We have never seen a legal ruling on that. If the administrator was guided by an opinion of counsel, we have yet to see it, although essentially it is a legal question.

Our counsel, with all due respect, have looked at it and they do not agree with that ruling at all.

Senator HARTKE. What States other than New York require odorization of gas?

Mr. SWIDLER. I should think, Senator Hartke, that practically all of the Northeast is in that circumstance. Wherever these lines go through populous areas, wherever they are intermingled with local transmission lines and distribution systems, we would have the same problem.

Senator HARTKE. Suppose there is a new line that is going to go through a piece of private property, does the homeowner himself have to employ his own people and expert witnesses to bear the burden of proof to decide whether or not the line is safe or to challenge the safety? Who makes that decision?

Mr. SWIDLER. If you are talking about an interstate pipeline—

Senator HARTKE. I am talking about an intrastate pipeline within New York.

Mr. SWIDLER. I will ask Mr. Bonner to answer.

Mr. BONNER. In New York the safety of an intrastate line being constructed is determined by the gas inspectors on whether or not it meets the applicable construction standards in our State safety code.

If the construction does meet the code, it is determined that the line is safe and, therefore, if the homeowner wanted to challenge the stringency of the standards, of course, he would have to hire his own experts.

Senator HARTKE. The homeowner would have to hire his own experts?

Mr. BONNER. To challenge the standard itself. But as far as the construction practices—

Senator HARTKE. What about to challenge the question of the actual safety, whether it met the standards?

Mr. BONNER. This is done by our inspectors. Every line, high-pressure line which operates over 125 pounds, we have inspectors there when every foot of it is constructed. When the tests are done, the final testing of the pipeline must be approved by one of our inspectors.

Senator HARTKE. Are any of you familiar with the West Virginia situation?

Mr. SWIDLER. Yes. Mr. Mazzei is here and would like to say something.

Senator HARTKE. Wasn't this the precipitating action which caused the decision by the OPS with regard to the taxation of interstate lines?

Mr. MAZZEI. I am not sure I understand your question, Senator.

Senator HARTKE. In testimony here it has been shown that as far as taxation of interstate lines, not intrastate—which funds are to be used for the purposes of safety investigation—the OPS has said no longer is it possible for the States to make that assessment and that taxation. Isn't that your interpretation?

Mr. MAZZEI. That is right, sir.

Senator HARTKE. Wasn't the West Virginia case the situation which precipitated and really brought this whole matter in focus?

Mr. MAZZEI. I think this is partially the result of that. We now have pending before our commission a case against Tenneco and Texas Eastern in which we have assessed them on their interstate facilities in our State. Counsel for Tenneco wrote to the Office of Pipeline Safety

asking them if West Virginia could legally do this. The response from Mr. Caldwell was that no, we could not do it.

We also received a letter from Mr. Caldwell saying we had no authority to assess interstate facilities.

This case is pending and it probably will go to the courts.

Senator HARTKE. But OPS made a reply that you did not have the authority to make that assessment; isn't that true?

Mr. MAZZEI. That is correct.

Senator HARTKE. Did that have any effect on actions in your State in regard to safety inspection?

Mr. MAZZEI. If we lose the right to collect money from the interstate facilities, we will have to drop out of the agency arrangement with OPS because we won't have the finances.

Senator HARTKE. That is what I was trying to bring out.

All right. Thank you. Good to see you again, Joe.

Mr. and Mrs. Charles Baker from Collinsville, Okla.

STATEMENT OF CHARLES BAKER; ACCOMPANIED BY DOROTHY BAKER, COLLINSVILLE, OKLA.

Mr. BAKER. Mr. Chairman, I would like to take this opportunity to thank you for this opportunity to appear before you in this hearing.

My name is Charles C. Baker, and I would like for you to meet my wife, Dorothy. We are from Oologah, Okla. We have three children. We used to live on a farm at Oologah, but since December of 1970, we have been living in a small apartment in Collinsville, Okla.

I am a welder, and I have been for 17 years. I have welded pressure vessels, heat exchangers for the oil and gas industry, aircraft welding and pipe welding. I have been certified by the U.S. Government, the U.S. Navy, and have held many qualification cards from the American Society of Mechanical Engineers.

In 1970, a 20-inch high pressure natural gas line went through our farm, 230 feet from our home. We were very concerned about the location of this line, prior to the installation. This pipeline doglegged around our home because we would not sign an easement for less money than we originally paid for the land.

Also, we refused to sign because they would not give a description of where the line was to be located. We were shocked and outraged by these tactics, but the biggest shock was yet to come—the actual construction of the line.

The fence crew had warned us of code violations on this pipeline, and also of three failures that occurred on the hydrostatic test. We contacted Maurice Meyers, head of the Office of Pipeline Safety under the Oklahoma Corporation Commission, and told him what the men had told us. Mr. Meyers ignored and refused to discuss more than one failure on the hydrostatic test.

We requested a map of the route the line was to take. He said the one and only inspector for the State, Tommy Chastain, had the map in his possession, and he would not provide us with a copy.

We also asked for a copy of the B 31.8 code which he would not provide. This B 31.8 code is the backbone of the Federal pipeline safety laws. We subsequently had to order one from New York.

On Saturday, November 28, 1970, the pipeline crew came through our farm, they welded, X-rayed, wrapped, and buried the pipe in approximately 2 hours. This was almost three-quarters of a mile of pipe; a half mile was on our property.

The only thing not completed was the river crossing, cattle crossing, and road crossing. This was completed by another crew called the tie-in crew. I was there and saw the work being done.

The following evening, a Sunday, we received the telephone number of the chairman of the Oklahoma Corporation Commission; he is the head of the Oklahoma Pipeline Safety Board. He was not there when we called, but he did return our call that same evening.

At that time, we told him that we had taken photos of the pipeline showing inadequate wrapping and that we wanted an inspector out to check this line. I also told him that there was other violations which could not be photographed.

He asked me to write an informal letter and we would receive an informal hearing. I told him there was still sections of the pipe exposed that would verify our charges and that there was not time to write and mail a letter, as the line was about to be buried.

The chairman told me it was no more than fair, to list the charges and give the company a chance to prepare a defense. I was not interested in corresponding with the chairman. I wanted an inspector sent to look at the pipeline and see the shoddy construction.

The chairman said: "Let me tell you, if you are trying to create a big fuss, you are barking up the wrong tree." Then he said, "Let me ask you a question: If they moved the line 1,000 feet away from your home, would you be satisfied?"

This surprised me, as Chairman Nesbitt had told me earlier that he had no power in the routing of this line. I told him, "I thought you had no power in the routing of this line."

He said, "Just answer my question."

I said, "What good would it do?"

Then he said, "If they moved it a half a mile, would you be satisfied?"

I then asked him if he was talking for the pipeline company.

He hesitated and then said, "No."

That ended the conversation.

I took off work and was available to meet with an inspector. I felt sure the chairman understood my position and would send an inspector out.

To be assured, I placed a long distance call to our State Senator, Clem McSpaddon, and asked him if he would call the State Pipeline Safety Office and request an inspector to come to our farm to check out this complaint.

He promised he would get an inspector to come. If for some reason he could not, he would call back. He did not return the call.

We also talked to the Governor's legal aide and asked him if he would do what he could to get an inspector out.

The Governor's office called back and told us their hands were tied, and they had no power over the Oklahoma Corporation Commission.

Since we had not heard from Senator McSpadden, we assumed an inspector would be there the next day. But none showed.

We had given up hope of an inspection when the Senator's office called and told us they were promised by the Oklahoma Commission an inspector would be sent to see us. No inspector ever contacted us.

On December 2, 1970, a crew installed the Caney River crossing behind our farm.

On December 3, an article appeared in the Tulsa paper that said Chairman Nesbitt would proceed with a "quick hearing" on our complaint, if we would write Chairman Nesbitt a letter, the chairman stated that he would make it convenient and inexpensive for us to have a hearing.

We wrote and mailed the letter requesting the hearing on the same day we read the article, December 3.

We received a letter within 2 days stating that our request for a hearing was too informal. Chairman Nesbitt stated in the letter that we should list the law violations so Public Service Co. of Oklahoma—Transok Pipeline Co. is owned by Public Service Co. of Oklahoma—who owns the pipeline company, could have ample opportunity and time to prepare its defense.

We had not yet received a copy of the B31.8 Code, and we knew the code was adopted by the State of Oklahoma. Therefore, as soon as we got the B31.8 Code, we were going to refile our complaint citing code violations.

This was the beginning of the Oklahoma Corporation Commission's shifting the burden of proof upon me and my family.

On December 7, we placed a long-distance call to Washington, D.C., to Joseph Caldwell, Acting Director of the Office of Pipeline Safety, under DOT.

He was not available and he returned the call to Dorothy. She told him of the problems we encountered of getting an inspector. Mr. Caldwell said that he would see that something was done.

Dorothy told him of Chairman Nesbitt's letter. Joseph Caldwell told her not to worry about answering the letter, that he would handle it.

Mr. Caldwell said that he was sending a special investigator to make a thorough investigation of this problem. He said to be sure and tell the investigator everything, including the first contact we had with the land buyer.

Marshall Taylor, the Federal special investigator, was to arrive on December 10. He came the next day.

We found out he went to the State Corporation Commission first. He was driven to our farm from Oklahoma City by Maurice Meyers and Tommy Chastain, who are representatives of the Oklahoma Safety Office. And these were the men who couldn't make it when the line was uncovered.

The three men went to Williams Bros., who had been charged with the testing and inspecting on this line, to examine their records.

Finally, they came to our farm. The investigator stayed about 6 hours taking notes.

We asked Marshall Taylor what disciplinary action might be taken against Public Service Co. and Oklahoma, and Marshall Taylor said Oklahoma could lose their certificate over this.

Later, Marshall Taylor called and asked for one of the photos

showing faulty wrapping, and he said to make sure it was marked as to date, time, and location.

We reminded him that we had already done this before he had seen the photographs. We mailed the photographs.

Marshall Taylor said a report would be made available to us in about 14 days. Fourteen days later Dorothy called Joseph Caldwell and asked for the report.

Joseph Caldwell told Dorothy we didn't deserve a report, and that the only thing we would receive is a statement that an investigation was made.

In this phone conversation, Dorothy noticed an extremely different attitude. We wanted more than ever to see the report. We felt they were hiding something.

At this point, we began contacting as many State and Federal representatives as we could, to get as much help as we possibly could, to get a copy of this report.

There wasn't a politician that could get the report for us. It was finally released in February of 1971, after we contacted Reuben Robertson at the Center for Study of Responsive Law.

Reuben Robertson called us and said that Joseph Caldwell said there was no investigative report made, just a summary of conversations made with various parties, and it was the Baker's word against the Oklahoma Corporation Commission, and we assumed the Oklahoma Corporation Commission was telling the truth.

Joseph Caldwell told a reporter for the Tulsa World, and Dorothy, that we had turned down a hearing before the Oklahoma Corporation Commission. This was a big lie. Dorothy told him we had not turned down a hearing.

Joseph Caldwell said, "You should have answered Chairman Nesbitt's letter of December 5, 1970."

Dorothy reminded Mr. Caldwell that he had told her quite clearly on December 8, 1970, that we did not have to write a letter, that he would handle it himself with Chairman Nesbitt, and there would be a thorough investigation made, there would be no need for a State investigation or hearing.

Dorothy and I knew at this time we were getting the grand run-around and we resented it, particularly when Mr. Caldwell told Dorothy on January 22, 1971, that it was now too late for us to have a hearing before the Oklahoma Corporation Commission, since we had not filed our complaint.

We received a copy of Mr. Caldwell's report, and we found it grossly in error. It was not accurate as to the dates, all the facts are missing, and none of the charges are presented. In the 6-hour interview with Taylor, he took down all dates, correct facts, and basic charges in the complaint.

As to the photo we sent, Mr. Caldwell acknowledged that the wrapping appeared to be faulty but said there was no way to tell where that section of pipe was.

The marking on the photo reads "No. 3, 11-30-70, 2:30 p.m., facing northwest toward river, approximately 1,000 feet east of Caney River. Pipe was put in crossing."

We can prove that Mr. Caldwell was lying when he said our photo was unmarked. Mr. Caldwell has given us the super runaround.

Dorothy and I felt we wasted 2 months trying to obtain the results of an investigation that never took place.

At this point we felt that the Federal Safety Board was working for the interests of the pipeline companies, rather than for their designated responsibility of protecting the public.

Several days later we got a letter from Mr. Caldwell stating that we should take any additional complaints to the Oklahoma Commission.

It was apparent that the tactic being used was to discourage and confuse us. But we were more determined.

Marshall Taylor did not physically or visually inspect this pipeline, as they had already buried their mistakes.

When we were informed there was no investigation, we demanded a hearing before the Oklahoma Corporation Commission, with the assistance of our attorney, Gerald Camins.

There were 3 weeks of testimony spread out over a period of 4 months. It started in April of 1971 and ended in July.

We had no hearing sessions in June as Chairman Nesbitt and the other two commissioners closed the safety hearings to take a month's vacation, even though a trial examiner conducted the hearings.

We were offered the services of a commission attorney. We declined as we were told by this same attorney that he would not only represent us during the hearing, but also the State corporation commission. He would also defend the commissioners' decision regardless of who they ruled for.

Dorothy and I wanted an attorney that would represent us personally rather than having a conflict of interest.

In a letter to Reuben Robertson at the center, Mr. Caldwell states that "We have no information that indicates that the State is placing the entire burden of proof on the citizens. The burden of proof that a pipeline is safe is for the companies to demonstrate."

We have news for Mr. Caldwell. The Oklahoma Corporation Commission has placed the entire burden of proof on us. This unbelievable burden was placed on us when they refused to send an inspector to inspect the line when it was uncovered and when we requested it. This burden of proof has cost us over \$21,000 to date and the cost is still mounting.

We have taped all of the hearings, and when we receive a transcript, we proof it with the tapes. We have found many errors in the transcripts. The court reporters also used a tape recorder. They have checked back and changed all the errors we found.

But, now we have been advised by letter to our attorney that in order to get a correction on a transcript, we must apply for a special hearing before the commission. This will be an additional expense and burden to us, and it certainly is uncalled for when the court reporters have their tapes to verify any changes requested.

The \$21,000 does not represent any part of the additional expenses we are out for maintaining another home. We were forced from our home due to the hazard of this faulty pipeline. We have not had the use of our home since December of 1970. Dorothy and I have sold our cattle at a loss.

We had to mortgage our farm, and have sold other assets at a loss to get funds to continue fighting this injustice.

We have made five requests during the hearing to shut the line down or substantially reduce the amount of pressure until a final decision is received. Our four requests were turned down, and the last one, which was made in July, has not been answered yet.

We asked the Oklahoma commission to uncover the line so we could prove our charges, but Public Service Co. of Oklahoma wanted us to post a quarter of a million dollar bond, plus pay all of the expenses for uncovering the line. This we could not afford.

At the hearing we presented witnesses and evidence to faulty wrapping, failure to properly cushion rock in ditches so as not to damage the coating or the pipe, failure to bury the pipe at required depths, misalignment of longitudinal seam when field bends were made, and the most damaging of all—the X-rays.

We hired an expert to examine the X-rays and he found approximately 2,000 welds that are not within the minimum Federal and State safety code. The commission brought from out of State a completely impartial expert to examine a sampling of the film our expert rejected as not being within the code.

The Oklahoma commission's independent expert found more extensive defects in his examination, whereas our expert tended to be more conservative.

When Mr. Caldwell was informed by us of the tremendous amount of weld defect, he told Dorothy the code only required the company to X-ray 15 percent, and if it had 15 percent good welds, that they were still within the code. This is absolutely ridiculous and outrageous.

No place in this code does it state that a company can have 85 percent of its welds defective, as long as they can produce 15 percent acceptable welds.

When Mr. Chastain, the State inspector for the safety board, testified, he said he was contacted by Senator McSpadden and he told him that he would check out our complaint, but he was told by his superior, Maurice Meyers, not to go any farther than the west bank of the Caney River.

We live on the east side of the Caney River, also, the section of pipe that was to go into the river crossing was on the east side of the Caney River.

We have just this week written the commission demanding that the commission conduct a hearing to investigate fraudulent statements Public Service Co.'s witnesses have made.

In the meantime, we are deprived of our home, while the company is not deprived of the use of its gas line. This pipeline is like a bomb with an unknown timing device. It can explode at any time.

I ask you, would you ask your family to live next to such a hazard, and put up with the mental strain of wondering if this is the day it will explode?

On our property alone there are 29 defective welds as shown on the X-rays, and the most important X-rays we are concerned about, seven X-rays, are missing for some unexplained reason. Our concern is because they are in sequence to some of the more glaring defects observed by our expert.

The company and Joseph Caldwell's defense is that the hydrostatic test is a cure-all, even for defective welding. If this is so, why were

there 1,019 explosions on natural gas lines alone that caused death, injury, or property damage in 1970?

I have worked hard for many years to provide my family with the security of a home. In a matter of months I have lost most of my assets and will be in debt for many years to come, through no fault of my own, but this has come about because of the lack of responsibility the industry and the Federal and State Safety Boards have shown.

Perhaps you cannot help me and my family at this time, but I ask you, please do everything you can so this will never happen to another American citizen.

Thank you.

Senator HARTKE. I don't have any questions. I did want your testimony in the record before we called upon the next witness. Maybe we will have some information for you at that time.¹

Mr. BAKER. Thank you, Senator.

Senator HARTKE. Mr. Robert L. Lawrence, counsel of Transok Pipe Line Co.

STATEMENT OF ROBERT L. LAWRENCE, GENERAL COUNSEL, TRANSOK PIPE LINE CO.

Mr. LAWRENCE. Mr. Chairman, Transok Pipe Line Co. is a gas transmission company which supplies natural gas for boiler fuel to Public Service Co. of Oklahoma, an electric utility serving about 315,000 customers in Oklahoma.

We have built and are now operating 445 miles of 5LX transmission pipeline since 1955. All of it has been constructed since 1955.

We have a safety record of 100 percent freedom from accidents that are the concern of this committee, and I might add, our own concern.

We share your committee's concern over safety standards for the construction and operation of pipelines. That is why we have not been content just to meet the minimum standards of the Federal Pipeline Safety Code, which was adopted and is enforced by the State of Oklahoma. On the contrary, we have exceeded the code in almost every instance.

The Bakers' home is located in a rural area in Oklahoma, and the code permits less exacting construction specifications and quality tests than in densely populated areas, such as here in Washington.

Across the Baker property, we built the line and hydrostatically tested it as if it were built through the heart of this city.

I might add here, in this area the code requires a hydrostatic test of 1.1 times the maximum operating pressure. On the Baker property, the test pressure was 1.66 times the maximum operating pressure.

This section of the pipeline which has a maximum design pressure of 1,300 pounds, was tested to 1,351 pounds above the minimum yield.

I might also add that in cities in class 4 locations, the test requirement is only 1.4 times the maximum operating pressure.

If it is your committee's judgment, based on the mass of testimony you have heard in the past from expert metallurgists, engineers, and others, that stricter safety standards are called for, we are not here to protest them, but to endorse them.

The safety of the public, of our customers, and of our own employees is of vital importance to us.

¹ The documents submitted by Mr. and Mrs. Baker relating to their case are in the Subcommittee files.

You have heard Mrs. Baker's statements.

Mr. and Mrs. Baker made similar statements and presented testimony to the Oklahoma Corporation Commission, our regulatory agency, in a hearing that extended over several months.

We presented expert witnesses in rebuttal to each and every point, their criticism of welding, pipe wrapping, ditch filling, and hydrostatic tests.

At five different times during the hearing, the Bakers asked the commission either to shut down the line, require that it be dug up, or that the pressure be reduced. On each of these five occasions, the motion was denied, apparently based upon the commission's analysis of testimony to that point.

The transcript of that hearing is still being prepared and no decision has been announced. It would be a breach of professional ethics for me to comment further on the evidence presented at that hearing, or to speculate as to the probable decision.

Initial contact with Mr. and Mrs. Baker was on July 15, 1970. This contact was by a right-of-way agent for the purpose of negotiating an easement for the proposed pipeline.

Negotiations for an easement extended over a period of 2 months, all of which time the Bakers were represented by counsel. During this time, various alternatives were explored, including moving the location of the pipeline further away from the Baker home.

Transok was agreeable to this relocation, but the Bakers would not agree to execute an easement for a reasonable price, at any location suggested.

Finally, in order not to impede the construction of the pipeline, it was determined that it would be necessary for Transok to exercise its right of eminent domain, and a condemnation action was commenced September 24, 1970, condemning an easement for the pipeline in its present location.

It should be pointed out that the pipeline as located is approximately a city block distant from the Baker home and that most of us who live in cities have high-pressure gas pipelines as close, or closer, to our homes than this pipeline is to the Baker home.

I might also add that this pipeline goes closer than 230 feet to other homes along its route. The people who own these homes, every one of them, signed an easement granting the right to put it there. If the Bakers moved from their home, as they allege, on December 14, 1970, such move could only have been made as a result of totally unfounded fears. This is particularly evident since, at the time of the alleged move, no gas was in the pipeline on or adjacent to the Baker property.

The Office of Pipeline Safety of the Department of Transportation and the pipeline safety engineer of the Oklahoma Corporation Commission investigated the Baker's complaints and found them to be without merit.

The representative of the Office of Pipeline Safety concluded, after his investigation, that the entire matter was a result of animosity caused by the condemnation.

I might add that the Bakers admitted that themselves.

Senator HARTKE. Mr. Lawrence, to what standard was that pipeline built?

Mr. LAWRENCE. ASME B-31.8 code was the basic standard. We exceeded the standard required by the code in almost every phase.

Senator HARTKE. Did you follow that for populated or rural areas?

Mr. LAWRENCE. It is being operated as a type B construction, which, of course, is for a class 2 location. The entire length of this line is a class 1 location, being less than 10 buildings per mile of line along its entire route.

The test, as I said, exceeds the test required in class 4 locations which is, of course, metropolitan areas.

Senator HARTKE. Does the test that you have made exceed the requirement for a built-up community, a populated area?

Mr. LAWRENCE. Yes, sir; it does.

Senator HARTKE. In other words, it is the same as you would use in the city?

Mr. LAWRENCE. It exceeds what is required in the city. The maximum operating pressure is 780 pounds. The maximum design pressure of this pipeline is 1,300 pounds. In this location, it could be operated at 940 pounds, but we chose to reduce the pressure to 780 pounds as a type-B construction, although it is in a class 1 location.

As I say—

Senator HARTKE. Are you talking about the operations as you have been operating it or about the—

Mr. LAWRENCE. No; this is a maximum operating pressure as filed with the commission. This is the maximum—

Senator HARTKE. When did you file that?

Mr. LAWRENCE. Upon completion of the line.

Senator HARTKE. In wrapping of the pipes, is the wrapping supposed to be smooth?

Mr. LAWRENCE. Yes; it is desirable to be smooth, and it is in most instances.

Now, you must realize that in corrosion protection, the wrapping is not all that is done.

Senator HARTKE. I know that. But about the wrapping, should the wrapping be smooth?

Mr. LAWRENCE. Yes; it should be smooth. It should be tight on the pipe. If there is a wrinkle, if it is enclosed, why that is no problem.

Senator HARTKE. That is not good, is that right?

Mr. LAWRENCE. That is no bother—

Senator HARTKE. Is what?

Mr. LAWRENCE. It is not a bother if the wrinkle is enclosed, if it is sealed.

Senator HARTKE. If there are a lot of wrinkles, though, of course, it would endanger your wrapping because it would be more easily punctured, isn't that true?

Mr. LAWRENCE. No; I don't think that would have any bearing on it. It is a very tough polyethylene tape that was used as wrapping, and it is very, very tough wrapping.

Senator HARTKE. I know it is tough.

Should it be smooth or not be smooth?

Mr. LAWRENCE. It is desirable to be smooth.

Senator HARTKE. Would the standard require that the wrapping be smooth?

Mr. LAWRENCE. There is no standard. The manufacturer recommends that it be smooth; yes.

Senator HARTKE. The manufacturer recommends that it be smooth. Was that done in this case.

Mr. LAWRENCE. The inspectors say it was.

Now, the pictures you have seen, and I am sure you have seen them, Senator, are of ends of pipe that are left out of the ground where tie-in weld will be made at a crossing of some kind.

Senator HARTKE. They are going to be put in the record, although they will be included by reference, due to the rules of the committee. But we will include them by reference.

Mr. and Mrs. Baker, the pictures you have given to me, they were pictures taken at the scene, right?

Mrs. BAKER. Yes, those are the actual photographs.

Senator HARTKE. I am going to have one of the aides hand them to you and ask you whether or not you consider the wrapping to be in accordance with the manufacturer's recommendation, whether you consider that they have been done properly?

It has a number on the back. Would you identify it?

Mr. LAWRENCE. Picture No. 10 shows the exposed end of the pipe that is left out of the trench for a tie-in at a road crossing. It does show wrinkles, but it also shows that the ends of the tape where it overlaps, are sealed.

Senator HARTKE. In one of those pictures there, you will find there is a gap.

Do you see the one there with a gap on it?

Let me have them. I will show you which one it is. If you can't see it, I can. I wear high-powered bifocals.

Now, that is not alone wrinkled, there is a gap.

Mr. LAWRENCE. There is a gap. It should be cut out and hand wrapped.

Senator HARTKE. That was not done?

Mr. LAWRENCE. I did not say it was not done.

There is no testimony that it was not done. The inspectors say they did.

Senator HARTKE. They say they did?

Mr. LAWRENCE. Yes, sir.

Senator HARTKE. If you look at all of those, you will see that instead of the wrapping being tight, quite the contrary, there appears to be very little of it that is tight.

Mr. LAWRENCE. I beg your pardon, Senator. The end of this pipe, if you look down 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 wraps, it is very smooth and tight the rest of the distance.

Senator HARTKE. Have you got the rest of them there?

Count those off for me, if you can count that far. There is one there as far as the eye can see there is not a smooth wrapping on it.

Mr. LAWRENCE. If you are talking about that, you are not looking very closely. It ends right there. The wrinkles end right there; do they not?

Senator HARTKE. The picture is probably—I am not going to ask you to interpret it any further as evidence.

What about this situation? In other words, you had some trouble with them. I understand you had trouble getting the easement. But

why didn't you have some inspectors out there at the time and go ahead and try to make sure that these people were satisfied that what was being done, was right?

After all, in this day and age, we live in an age of bigness, and you are big, and they are one farm. Aren't they entitled to be assured that what you are doing is safe for them?

Mr. LAWRENCE. Senator, I, personally, had no knowledge of their complaint about this. If I had, I would have personally been out there. I am sorry it came about like this. But I would like to say this one thing about wrapping and protection of a pipeline.

As you well know, regardless of what wrapping you put on it, it is possible to protect the pipeline from corrosion in spite of the fact that it is not wrapped by cathodic protection.

Senator HARTKE. I understand that. I am not talking about that.

Mr. LAWRENCE. I am saying even if some of these flaws did get in the ground, that does not make the pipeline dangerous.

Senator HARTKE. How many inspectors does the State of Oklahoma have?

Mr. LAWRENCE. They have Mr. Chastain and Mr. Maurice Meyers, two of them.

Senator HARTKE. How much of this did they actually inspect before it went in the ground?

Mr. LAWRENCE. They witnessed the tests of all of the welders that were on the line.

They witnessed the hydrostatic tests of the pipeline, every one of them.

Senator HARTKE. They tested that before the pipeline was laid, is that right?

Mr. LAWRENCE. The qualification tests of the welders, yes, and then they witnessed the hydrostatic test which was recorded and filed with the commission, and initialled each test section of the pipeline.

Senator HARTKE. To your knowledge, has any company in Oklahoma ever been cited for pipeline violation?

Mr. LAWRENCE. I believe one has been under investigation.

Senator HARTKE. Have you ever been cited by them?

Mr. LAWRENCE. No, sir. We have never violated it, to our knowledge.

Senator HARTKE. Did you bring in expert witnesses to rebut the testimony that was given by the Bakers?

Mr. LAWRENCE. I did.

Senator HARTKE. You did?

Mr. LAWRENCE. Yes, sir.

Senator HARTKE. How many of the claimed defects were actually rebutted?

Mr. LAWRENCE. Every single one of them.

Senator HARTKE. Did you ever try to keep the Bakers from seeing the X-rays of the pipeline that was placed around their property?

Mr. LAWRENCE. No, sir; Mr. Kamins, their attorney, asked to see the X-rays, and I told him any time he wanted to bring his expert to my office, I would have them there.

I believe it was on February 15, I am not sure of the exact date, I

had the X-ray film that he requested in my office, and he did not show up.

Senator HARTKE. Did the commission have to order you to deliver these to the attorney for the Bakers?

Mr. LAWRENCE. I brought them to the hearing in the trunk of my car. I had them available.

Senator HARTKE. Did the commission order you on May 1 to take them to the Bakers?

Mr. LAWRENCE. The situation was that their expert was in Oklahoma City, and we delivered the X-ray film to his hotel room for him to examine in the presence of one of our experts.

Senator HARTKE. Were all of them delivered?

Mr. LAWRENCE. All of them that we had, yes.

Senator HARTKE. What about some? Some disappeared?

Mr. LAWRENCE. Some are missing.

I might add, there is no requirement that you keep these things. Most companies dispose of them right away. They are worth 40 cents a pound for salvage, you know.

Senator HARTKE. Do you dispose of them, ordinarily. Do they ordinarily get lost like this, or what?

Mr. LAWRENCE. We have what was turned in to us. I know they complained of seven missing. I know for a fact there is probably 200 missing, because one of the inspectors told me that he threw them in the junk pile after carrying it around in his pickup for a couple of months.

Senator HARTKE. Did you object to the Federal or State inspectors actually looking at sections of the line on the Baker property?

Mr. LAWRENCE. I have never objected to any inspections.

Senator HARTKE. You did ask that a quarter-million-dollar bond be posted in case it was done, right?

Mr. LAWRENCE. They wanted to dig the pipeline up. It was in operation.

Now, you have had testimony this morning that it is a dangerous thing to go digging around a pipeline when it is under pressure. It would be a very costly outage, not only of the Transok Pipeline Co., but to the parent company if the gas was shut down by reason of somebody digging into it.

Yes, I requested the \$250,000 bond, and the response at that time was that there would be no problem. Later they changed their mind and said they could not raise it.

I had the impression that somebody else was going to furnish the bond for them.

Senator HARTKE. You said that hydrostatic tests were made.

How many?

Mr. LAWRENCE. There were nine test sections, if my memory serves me correctly.

Senator HARTKE. What was the result of those tests?

Mr. LAWRENCE. The entire length of the pipeline was tested above 90 percent of its design pressure.

Senator HARTKE. Did that, in your opinion, rebut the X-rays that showed that there were faulty welds?

Mr. LAWRENCE. Everyone who is familiar with the pipeline will agree that the strength of a pipeline is demonstrated in its hydrostatic test. This line was under a 24-hour hydrostatic test—the code requires 8 hours, I think—a 24-hour hydrostatic test above 90 percent of its design pressure.

Senator HARTKE. What about the X-rays?

Then the X-rays are not conclusive?

Mr. LAWRENCE. The X-rays—our expert testified that the man that they had was misinterpreting the X-rays, and it is apparently so, because they did stand the test.

Senator HARTKE. It is your contention that the X-rays did not show that there was any faulty welds?

Mr. LAWRENCE. We demonstrated that he was misreading the X-rays.

Senator HARTKE. Did you make any tests on the Baker property itself?

Mr. LAWRENCE. The last——

Senator HARTKE. Hydrostatic test on the Baker property?

Mr. LAWRENCE. The hydrostatic test on this section of the pipeline is from the Caney River to the power station, and this is where I say the test was not only 90 percent of the design maximum pressure, it was over 100 percent.

This pipe has a maximum guarantee pressure of 1300 pounds. It was tested to 1351 pounds in this section that crosses the Baker property.

Senator HARTKE. Did some of those pipes break at any time?

Mr. LAWRENCE. There were two failures on the hydrostatic test, which is not remarkable. The pipe people will tell you this is an unusually low amount. Both of these sections failed at above 90 percent of the maximum design pressure of the pipe.

Senator HARTKE. And when did that occur?

Mr. LAWRENCE. During the hydrostatic test.

This is the reason you test it, to find where it is weak.

We had two joints of pipe that did fail on two different tests. This, of course, we replaced at the expense of United States Steel.

Senator HARTKE. What percentage of the design strength are you pumping your gas through now?

Mr. LAWRENCE. The maximum pressure is 60 percent of the design pressure. That is 780 pounds.

Senator HARTKE. That is all the questions I have now, but we will have the Department of Transportation here with the Office of Pipeline Safety, and I would hope that you would keep yourself available until after that testimony is in. That will be this afternoon, after 2 o'clock.

(Whereupon, at 11:45 a.m., the committee was recessed to reconvene at 2 p.m. that same day.)

AFTERNOON SESSION

Senator HARTKE. This afternoon, on S. 980, S. 1910, and H.R. 5065, we will hear from Mr. Benjamin O. Davis, Jr., Assistant Secretary for Safety and Consumer Affairs, and I think you have Mr. Caldwell and Mr. Broderick with you.

STATEMENT OF BENJAMIN O. DAVIS, JR., ASSISTANT SECRETARY FOR SAFETY AND CONSUMER AFFAIRS; ACCOMPANIED BY JOSEPH C. CALDWELL, ACTING DIRECTOR OF THE OFFICE OF PIPELINE SAFETY; AND WILLIAM BRODERICK OF THE DEPARTMENT'S OFFICE OF GENERAL COUNSEL

Mr. DAVIS. Mr. Chairman, and members of the committee, we appreciate the opportunity to present the views of the Department of Transportation on S. 980, S. 1910, and H.R. 5065, bills to amend the Natural Gas Pipeline Safety Act of 1968.

Before commenting on the bills, I would like to assure you of my deep interest and concern for the natural gas pipeline safety program. Since I assumed office as the Assistant Secretary for Safety and Consumer Affairs, I have been and am still engaged in a learning process. I hope you can bear with me in this regard. I am, however, making a concerted effort to learn all I can about the pipeline safety program as quickly as possible.

I have reviewed the program thoroughly, and am now evaluating its current thrust. I have already visited the Houston field office of the Office of Pipeline Safety, and interstate transmission and intrastate pipeline facilities in the Chicago, Ill., metropolitan area. I am planning other field trips to become acquainted with the operational procedures of the gas industry, the nature of safety problems, and the means by which the Department can respond more effectively to safety needs.

When the Acting Director of the Office of Pipeline Safety appeared before you in July 1969, you raised certain questions about the program. I would like to review for you some developments concerning key questions you raised.

One question concerned the lack of a full-time Director for the Office of Pipeline Safety. I certainly agree with you that we need a full-time director and I wish to assure you that since I have taken office I have made an intensive effort to find and select a well-qualified person for this position. As a result, the Department has now some excellent candidates under active consideration, and I will do everything I can to have the position filled in the very near future.

You also expressed concern about the lack of public representation on the Technical Pipeline Safety Standards Committee.

I wish to assure you that I, too, am concerned that the public is adequately represented. Two of the public member terms expire next month. In filling the two positions, we are taking full cognizance of your concern and interest in this area.

You also inquired about the relationship of the liquid pipeline safety program to the gas pipeline safety program.

My testimony includes a recommendation that your committee amend the DOT Act to permit consolidation of these functions in the Office of the Secretary.

I believe other questions raised by you during the July 9, 1969, hearings, are generally covered in my testimony today. However, if they are not covered to your satisfaction, I will be happy to try and answer any further questions you may have.

With your permission, I would like now to proceed to the discussion of the pending bills to amend the Natural Gas Pipeline Safety Act.

Since S. 980 and H.R. 5065 as introduced were companion bills, I would like to discuss them separately from S. 1910.

As originally introduced, section 1 of H.R. 5065 and S. 980 would have deleted from section 5(a) of the Natural Gas Pipeline Safety Act the words "two years" and substituted the words "three years." Section 2 would have amended section 15 of the act to authorize the appropriation of funds to carry out the purposes of the act without limitations as to amount for any particular fiscal year.

As H.R. 5065 passed the House of Representatives, and is now before this committee, it contains three sections.

Section 1 would amend section 5(a) of the Natural Gas Pipeline Safety Act by deleting the words "two years" and substituting the words "four years."

Section 2 would amend the first sentence of section 5(c) (1) of the act to make mandatory payment of funds appropriated for Federal assistance.

Section 3 would authorize appropriations of \$3 million for fiscal year 1972; \$3,800,000 for fiscal year 1973; and \$5 million for fiscal year 1974 to administer the gas pipeline safety program.

Let me provide some background information concerning the proposal to amend section 5(a) of the act. That section provides for State agency participation in the administration of the act with respect to intrastate gas facilities whenever the State agency submits to the Secretary of Transportation an annual certificate that such agency has complied with certain statutory requirements.

One of these requirements is that the State certify that its law provides for enforcing safety standards by way of injunctive and monetary sanctions substantially the same as the Natural Gas Pipeline Safety Act. The section also provides that a State agency may file a certificate without regard to the requirement of such sanctions under State law for a period not to exceed 2 years after the date of the enactment of the act; that is, until August 12, 1970.

Because a number of States did not have adequate statutes on this subject last year, the Department proposed an amendment extending the time to meet this requirement by an additional year; that is, to August 12, 1971.

When the 1-year extension was requested, it appeared that State agencies might be able to obtain enactment of needed legislation during the general sessions of their legislatures in 1971. Our view was based on the substantial progress that had been made by the State legislatures after August 12, 1968, when the Natural Gas Pipeline Safety Act became law. On that date only Missouri and New York had laws relating to monetary sanctions which were substantially the same as the Federal law.

In 1969, 20 additional States enacted appropriate laws on this subject and in 1970 an additional 12 States made similar amendments. Since the legislatures of almost all States were to be in general session during 1971, it appeared that the States needing legislation might obtain its enactment in legislative sessions this year.

Some of the States were able to do so. The result is that as of November 1, 1971, 40 States plus the District of Columbia and Puerto

Rico have provisions substantially the same as the Federal law, and 10 States do not. Nine of the 10 States still need amendatory legislation. The Ohio statute is now being studied by the legal counsel of the Public Utilities Commission.

It is now clear that, in a few States which need amendatory legislation, the legislatures will not again be in general session until 1973. This, for example, is the situation in Minnesota. It also will apply to Ohio if the current legal review should indicate that the present statute needs amendment.

In light of this new information, the Department recommends that section 5(a) of the act be amended by deleting the words "two years" and by substituting the words "five years."

This additional time will make it possible for the few remaining States that need statutory changes to be eligible to submit certifications under section 5(a) until August 12, 1973. It is believed this extension of time is sufficient to enable these few States to obtain enactment of appropriate State laws.

As already indicated, section 2 of H.R. 5065 would amend section 5(c) (1) of the act. According to the report of the Committee on Interstate and Foreign Commerce, House of Representatives, recommending enactment of this bill—House Report No. 92-257—the stated purpose of this amendment is to make it mandatory for the Secretary of Transportation to pay Federal assistance funds to the States rather than merely authorizing that such payments be made.

The report states:

The purpose of the amendment is to make clear the Congressional intent that funds appropriated by the Congress for the purpose of inducing the States to enforce Federally established natural gas pipeline safety standards, should be expended for that purpose. If these funds are not so expended, the Federal/State program contemplated by the Natural Gas Pipeline Safety Act of 1968 is likely to collapse.

The Department does not favor this amendment because we believe it will inhibit administrative discretion and possibly lead to the indiscriminate payment of Federal funds and the resulting waste. We would prefer to have some discretion as to when and under what conditions the Federal funds may best be utilized.

Section 3 of H.R. 5065 would amend section 15 of the act by authorizing appropriations of \$3 million for fiscal year 1972, \$3,800,000 for fiscal year 1973, and \$5 million for fiscal year 1974. Although the Department recommended a continuing authorization for appropriations without a ceiling that might be appropriated for any fiscal year, it does not object to such ceilings if the Congress considers more desirable this method of funding.

As indicated in our letter to you of March 24, 1971, and again in our letter of August 4, 1971, submitting our views on H.R. 5065, the Department respectfully urges your committee to add an amendment to your bill to transfer the decisionmaking authority for liquid pipeline safety matters from the Federal Railroad Administrator to the Secretary.

You may recall that the Department of Transportation Act of 1966 transferred the liquid pipeline safety function from the Interstate Commerce Commission to the newly created Department of Transport-

tation and statutorily delegated that function to the Federal Railroad Administrator where it is now located.

The Natural Gas Pipeline Safety Act of 1968 vested safety jurisdiction over gas pipeline facilities in the Secretary of Transportation.

In administering these programs the Department has learned that the technical aspects of liquid pipeline safety are substantially the same as the technical aspects of gas pipeline safety. In actual practice, the Office of Pipeline Safety acts as the entire technical staff for the Federal Railroad Administration on liquid pipeline safety matters.

Consolidation of the gas and liquid pipeline safety functions in the Office of the Secretary would increase the efficiency and promote the economy of the Department's performance in these important areas of responsibility.

The Department would like to transfer the liquid pipeline safety function to the Office of the Secretary so that function can be combined with gas pipeline safety functions in the existing Office of Pipeline Safety.

Under the Department of Transportation Act, the transfer of the liquid pipeline safety function out of the Federal Railroad Administration requires approval of the Congress. On March 24, 1971, the Department transmitted a letter to the committee chairman, Mr. Magnuson, urging this amendment and enclosing language which would accomplish this purpose.

S. 1910 would amend the Natural Gas Pipeline Safety Act by:

(1) Permitting a State agency to submit a section 5(a) certification when enforcement of monetary sanction is carried out either by a State or a State court;

(2) Proposing yearly apportionment of Federal assistance funds to the States under a fiscal arrangement known as "contract authority";

(3) Authorizing a minimum annual payment of \$20,000 to the national organization of State commissions to advance State agency safety programs; and

(4) Authorizing Federal assistance to States that serve as agents of the Secretary to aid in enforcement of Federal safety standards applicable to interstate transmission facilities.

The Department believes that an administrative civil penalty that does not require resort to the courts except for collection is a far more flexible and useful enforcement tool. The door should not be opened to an alternative method of enforcement by our already overloaded courts.

The remarkable record of State legislation, conforming with the Federal statutory provisions enacted since the Natural Gas Pipeline Safety Act became law, is ample evidence that a great majority of the States share these views. We do not recommend this proposal in S. 1910.

We also do not favor the proposal for yearly apportionment of Federal assistance funds under contract authority. This type of arrangement is appropriate only for established assistance programs. It should be considered here only when both the Federal and State pipeline safety programs are more fully developed and have reached a more predictable level of funding and personnel. Until that time the Secretary should retain much more latitude in disbursing these funds than would be permitted under contract authority.

Further, the proposed subparagraphs (4) and (5) overlap and are somewhat inconsistent with the provisions governing payment that are already contained in section 5(c).

Likewise, we do not favor the proposal to make a payment of not less than \$20,000 annually to the national organization of State commissions. This proposal was reviewed by the Congress during its consideration of the 1968 act and was rejected.

Most of the activities that would have been funded by this payment are now being carried out by OPS. Thus, the Department has no basis to justify a change in that legislative decision.

The Department does not object to the proposal to amend section 5(c)(1) of the act to permit Federal reimbursement of up to 50 percent of any costs incurred by a State while serving as an agent of the Secretary with respect to interstate transmission facilities.

We regard this agency agreement as a temporary arrangement until such time as the Department is adequately staffed to undertake this responsibility.

Meanwhile, we believe that a State agency should not be required to bear this financial burden alone. Section 5(c)(1) of the act already authorizes Federal assistance to State agencies and some funds are being appropriated for this purpose.

If the Congress should enact this amendment we would include the Federal share of the costs involved in this agency relationship within the amounts being made available for Federal financial assistance to the States.

Based upon information informally received from the States that are presently serving as our agents, this activity is estimated to cost about \$75,000 during 1971. The proposed amendment would permit Federal assistance up to 50 percent of such costs as incurred in 1973 and future years.

In addition to the Department's views on these bills I would like, with your permission, to give you a brief overview of the status of the natural gas pipeline safety program.

At the present time 50 State agencies, including Puerto Rico and the District of Columbia, are cooperating with the Department under section 5 of the act. Only Louisiana and New Jersey are not participating.

Thirty-seven State agencies are cooperating under section 5(a) certificates; and 13 are cooperating under section 5(b) agreements. Twenty-one State agencies continue to serve as agents of the Secretary with respect to interstate transmission lines.

We realize it takes time to get money and personnel for these activities. Some States have large, efficient staffs while others are still trying to get their programs off the ground.

The Department's overall approach in this program is to assist each State as much as possible with its individual problems. This assistance takes the form of advice on legislative matters, administrative procedures, and personnel qualifications, as well as training and technical information.

The Office of Pipeline Safety also serves as a clearinghouse for information on pipeline safety regulatory matters among the States.

In addition, we are preparing technical manuals for use by the State

agency staffs in evaluating and monitoring the safety of gas pipelines. We are also developing a training course on monitoring pipeline operations for State personnel.

In appropriating \$500,000 in Federal assistance funds for fiscal year 1971 the Congress enabled the Department to give impetus to the Federal-State cooperation contemplated under the act.

Initially, 43 States expressed interest in receiving Federal financial assistance but eight of them did not apply for varying reasons. The funds were allotted to 35 applicant States in June this year. We plan to reimburse them early next year for the Federal share of their 1971 program costs.

With the appropriation of \$750,000 Federal financial assistance for fiscal year 1972 the Department has received applications from 41 States, including the District of Columbia and Puerto Rico. The applications are being processed and we expect to obligate the funds within the next few days.

Of the remaining States, nine did not request Federal funds and two—Louisiana and New Jersey—are not eligible to receive funds.

In administering the act we have leaned heavily on the Technical Pipeline Safety Standards Committee established pursuant to the act for assistance.

Since its establishment in January 1969, 10 meetings have been held. We have found this committee to be one of the most valuable features of the act. We shall continue to draw on this body of experts for advice and recommendations.

The Office of Pipeline Safety now has a total of 29 positions. Twenty-three of these positions are filled, with two others committed but being held up due to a DOT freeze on hiring. We are recruiting to fill the remaining four and will fill them as soon as possible.

In November 1970 we established a pilot field office with three positions in Houston, Tex. There are plans to establish four additional field offices in other parts of the country when resources become available.

Aside from our State relationships described above, the two most important accomplishment since our last appearance before this committee have been:

- (1) Placing in effect the Federal safety standards and,
- (2) The establishment of a leak and test-failure reporting system that became effective February 9, 1970. This system requires certain operators to report certain leaks or failures and all operators to report annually on their overall operating experience. This information will enable us to detect problem areas that need attention and evaluate the effectiveness of all aspects of our regulatory program.

Information obtained for individual leaks from the OPS leak and test-failure reporting requirement in part 191 of DOT regulations has confirmed two areas needing immediate attention. The two main causes of leaks are damage by outside forces and corrosion. We have taken or are taking steps to reduce these incidents in each case.

Outside damage accounted for approximately 63 percent of the individual leaks reported to the OPS. We are developing more comprehensive regulations for the marking and identification of pipelines.

We also have drafted a model statute for passage by State and local

regulatory authorities to require certain actions on the part of utility operators and parties having the need to dig or excavate in the vicinity of underground utilities.

We plan to solicit the support of all private government groups and organizations associated with or involved in the operations or control over utilities.

Corrosion accounted for approximately 15 percent of the individual leaks reported to OPS. We now have in effect a complete new set of corrosion regulations that should reduce this problem.

We are also fostering the development of specialized equipment that can be used to determine the condition of certain types of distribution pipelines that have been affected by corrosion.

Our regulatory program may be described as having three distinct segments:

- (1) To develop and publish Federal safety standards.
- (2) To inform and educate all concerned parties about what is and will be involved in this program.
- (3) To monitor gas pipeline operators for compliance in conjunction with State agencies.

We are now evaluating the Federal safety standards to determine areas in which they may be strengthened or improved.

The second segment, communication with those involved in the program, has been implemented. During 1970 the OPS staff participated in some 55 meetings, talking to over 7,500 State, industry, union, and other interested parties. Recently we began publication of a monthly advisory bulletin for dissemination of information to all interested parties.

The third segment has been implemented on a limited basis both in the field and from our headquarters office. Last year we established a pilot field office in Houston, Tex. That office is staffed by two technical men who cover the States of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

In four of these States our staff is monitoring the State agency activities with respect to State agency cooperation under the act. Similar monitoring visits have been initiated in other States by our headquarters office personnel.

Since Louisiana does not have a State agency cooperating with the Department, all gas facilities in that State are under our direct safety jurisdiction.

Our Houston office has been visiting a number of small operators in that State to explain the purpose of the Natural Gas Pipeline Safety Act, to identify the Federal safety standards, and to point out the requirements for operator compliance with those standards.

In closing I wish to express the appreciation of the Department for the opportunity of presenting our views on the bills your committee is considering; and on summarizing gas pipeline safety program developments for you.

If there are any questions I will gladly try to answer them.

Thank you, Mr. Chairman.

Senator HARTKE. General Davis, in your statement you make no mention whatsoever as to how your department deals with the human element which is involved. You do not make any statement with re-

spect to any mechanism that you have set up as to handling grievances from people.

One of our concerns about this act is to make certain that it protects persons and prevents catastrophe. I want to ask you in regard to this, how many safety complaints have you received from individuals in the past year?

Mr. DAVIS. Do we have a number, Mr. Caldwell?

Mr. CALDWELL. It is not available.

Mr. DAVIS. I do not know the number of complaints that we have received, but I would like, sir, to assure you that Secretary Volpe's stated policy is that every inquiry he received by any element within the Department of Transportation should receive full consideration by the particular part of the department receiving that inquiry.

Senator HARTKE. I might say if his record is no better in taking care of individual requests than it is from the committee, that it certainly is very, very bad.

I will say to you, as I said before, Secretary Volpe doesn't have a very good record in front of this committee for performance.

I would like to know, sir, what kind of system you have, what kind of mechanism do you have? How do you handle the complaints, individual complaints? What do you do with them? Who takes them? You have 23 employees you said. How many are assigned to taking care of this problem?

Mr. DAVIS. All of them plus myself and the members of my staff; everybody in my office, sir, is required to give full consideration to any complaint that is posed either by telephone or by letter. It is a standing policy, that we do all within our capability to satisfy within the limits of our responsibility and within humanitarian concern that the Federal Government should do.

Senator HARTKE. Do you have a procedure? Can you tell us what the procedure is? If you have a complaint, how do you make a determination whether it is valid?

Mr. DAVIS. Mr. Chairman, if I understand your question correctly, in each individual case, there is either an investigation made by a member of my office, or the Office of Pipeline Safety.

I require that either I, my deputy, or other people in my immediate office will review the actions of the Office of Pipeline Safety pertaining to a particular complaint. We feel that a system of review by disinterested parties, at another echelon within the department, better assures that the complaints are satisfactorily handled.

For example, sir: in every case of a complaint handled by Mr. Caldwell, the Acting Director, his letter answering the complaint comes to my desk for my consideration before it goes out over his signature. Before I get the letter, both my deputy and my executive officer usually have reviewed it, both for substance and form. I assure you, Mr. Chairman, that we have every intention and every desire to satisfy completely within the limits of our power and capability every complaint that is put to us.

Senator HARTKE. You heard the Bakers testify this morning. They claimed they were forced to bear the burden of making this investigation and spent something in excess of \$20,000 trying to prove there were violations.

Can you tell us exactly what the record is in your department on that? I think you came on board afterward, but can you tell us what happened?

Mr. DAVIS. Mr. Chairman, I feel that the case of Mr. and Mrs. Baker is a case in point. When I first came on board, sir, this case by voluntary action of the Acting Director of Pipeline Safety was brought to my attention. I reviewed it, and I felt that the actions that had been taken by Mr. Caldwell and his people were correct.

Sir, I would say that the dominating factor in the handling of the Bakers case is the Federal-State relationship. I believe that the Office of Pipeline Safety has felt that wherever possible we must carry out our responsibilities through a State agency—in this case, Oklahoma.

However, the Office of Pipeline Safety did not leave this matter completely to the State of Oklahoma. It satisfied itself first that there was in our view no immediate safety problem, no immediate danger to the Bakers.

One very definite factor in reaching this conclusion involved the pressure on the line. I am told, for example, that the yield strength on that line is either 1,100 or 1,300 pounds per square inch. I am further advised that the pressure of the gas going through that line in the vicinity of the Baker home is 250-odd pounds per square inch.

The conclusion by the Office of Pipeline Safety was that the danger in that pipe, if there was any danger, was in corrosion, sir, and this was not an immediate danger.

Consequently, the conclusion reached by the Office of Pipeline Safety was that the State of Oklahoma in holding hearings would handle the Bakers' case in a proper manner.

But, even beyond that, sir, the Office of Pipeline Safety had one of its office people present at every hearing of the Oklahoma Commission in the Baker case and has reviewed in every case the available written reports of these hearings.

Mr. Chairman, I believe that, without preempting the responsibility of the State of Oklahoma, the actions by the Office of Pipeline Safety have been correct. I feel that when they satisfied themselves that there was no danger to the Bakers as people and that the complaint was being handled adequately, they deemed it proper to allow the State to proceed. Perhaps the case has not proceeded as rapidly as some would desire—I understand that the complaint was made in December of 1970, and it is a fact that this is 11 months later. However, we are talking, I think, of a case of whether or not the Federal Government should have stepped in and preempted the responsibility of the State of Oklahoma. I think that the decision was a proper one, sir.

Senator HARTKE. Do you have regulations that require that the X-rays of the welds be retained?

Mr. DAVIS. I don't think so, sir. I know that the X-rays of the welds were not reviewed—I don't think they were reviewed in this particular case by our representative. I think they were, however, reviewed by the State during the course of the hearing.

Mr. CALDWELL. Sir, one point to your question. Our regulations do not require the retention of the X-ray film. We do require the retention of records resulting from the checking of the welds by X-ray.

Senator HARTKE. How can you tell after the line is in the ground whether it has any defects?

Mr. CALDWELL. Well, sir; our regulations require that the integrity and strength of the pipe be checked hydrostatically beyond the operating pressure under which the line will operate on a day-to-day basis. This is a strength test, and it is required to be maintained for 8 hours. It is my understanding that the particular line in the vicinity of the Bakers' home was tested for 24 hours at a pressure much greater than that at which it is operating. In fact, our information indicates that it was tested to 1,170 p.s.i.g. for a maximum operating pressure of 750 p.s.i.g.

Senator HARTKE. Who makes that test?

Mr. CALDWELL. The operator is required to make that test and properly record the results of the entire test.

Senator HARTKE. In other words, it is a self-policing operation?

Mr. CALDWELL. When you say self policing, it is the responsibility of the operator to comply with the regulation. It is the State regulatory commission's and the Department of Transportation's responsibility to monitor to whatever degree possible the compliance with the regulation.

Senator HARTKE. How much monitoring do you do? How many people do you have assigned as monitors?

Mr. CALDWELL. Well, the only two full-time people——

Senator HARTKE. You have two people in the Nation, right?

Mr. CALDWELL. Sir, they are not responsible for the entire Nation. They are only responsible for five States. We maintain that we cover the rest of the States from our Washington office. Obviously, with the limited staff that we have, very little monitoring goes on.

Senator HARTKE. So, really the fact of it is you have to take their word for it?

Mr. CALDWELL. To a large degree, yes, sir.

Senator HARTKE. And these are self-serving declarations then, are they not?

Mr. CALDWELL. By the nature of the way we have been able to carry out our responsibility to date, I guess you could say that, but that is certainly not the intent.

Senator HARTKE. What assurance does that give to an individual out there? How can he be assured that anything is going to be done? I wouldn't expect that the company is going to have a record that they put in defective pipe. Would you really think they would, now?

Mr. CALDWELL. These operators have many other areas of responsibility besides just meeting our safety regulations.

Senator HARTKE. What is your responsibility? What good is it having you folks out there? Maybe you have too many people if that is what you are doing. I thought you didn't have enough, but if you are not doing anything, maybe it would be better to abolish it.

Mr. CALDWELL. I did not mean to imply that we are not doing anything.

Senator HARTKE. What are you doing? Here is the situation on pipeline safety now. What have you done in this particular case? There you have self-serving declarations, self-serving records of the company itself, and you say you do not monitor these individual

records, you do not require them to keep the X-rays, you do not require anything beyond the fact that they have a record in which they say they did everything right.

I really cannot imagine a pipeline company coming in saying they did not lay the pipe correctly.

Mr. CALDWELL. I think you may have misinterpreted what I said. You asked the question how many full-time people we have monitoring. I answered two in a five-State area. The remaining States are monitored to the degree possible with the rest of our staff.

Our staff's primary mission, by direction of the Natural Gas Pipeline Safety Act, during the first 2 years has been to devote primarily its full attention to the development of a basis set of regulations. You have to have regulations before you can check for compliance. We are now getting into the area of monitoring and checking for compliance.

Senator HARTKE. General Davis, or whoever wants to answer this, you mentioned you rely heavily on the Technical Pipeline Safety Standards Committee for advice and recommendations.

Do you have any formal agreements with any other groups concerning preparedness or regulations?

Mr. DAVIS. No, sir.

Senator HARTKE. What about the American Society of Mechanical Engineers?

Mr. DAVIS. A representative from the American Society of Mechanical Engineers has called on me, sir. He has made me aware of what they do.

Another office that I am interested in works with them. We use their standards.

But to the best of my knowledge, sir, we have no formal agreement with them.

Senator HARTKE. Mr. Caldwell, would you like to say that you do have one?

Mr. CALDWELL. No, sir. I would support what the General said. We do not have a formal—

Senator HARTKE. Did you have?

Mr. CALDWELL. No, sir; we never did have a formal agreement such as is established with the Technical Pipeline Safety Standards Committee.

There has been some correspondence between myself and the American Society of Mechanical Engineers. They have, after our regulations were published, reorganized in an effort to be more responsive to the development of guidelines for carrying out our performance standards.

There was some correspondence between that organization and myself, but you certainly couldn't call it a formal agreement or arrangement.

We do have close liaison with the group, and obviously, if they were going to develop guidelines to meet our performance standards, it certainly behooves both of us to agree that it is a method of carrying out—not the sole method, but one method of carrying out or meeting our requirements.

Senator HARTKE. But you wrote to them on September 18, 1970, as follows:

This is to confirm the agreement between the American Society of Mechanical Engineers and the Office of Pipeline Safety as detailed in your letter of August 7, 1970, to Mr. William C. Jennings, the then acting director of the office. A copy of the items of agreement is enclosed.

Among those agreements is one provision which says:

OST will publish a notice of proposed rulemaking and request public comment on any regulatory action which is formally recommended by ASME.

Isn't that a rather privileged position for an organization which is not officially a part of the Government?

Mr. CALDWELL. No, sir; it is certainly not.

We will publish for consideration for rulemaking any recommendation submitted by anyone that we want or feel is appropriate.

ASME is a committee-type organization, and this correspondence, as I referred to, is an effort to insure that their committee had an understanding of what their leaders or whoever the key people in the ASME were trying to accomplish.

Senator HARTKE. You refer to it as an agreement, do you not, Mr. Caldwell?

Mr. CALDWELL. Yes, sir.

Senator HARTKE. And do you not also say in item 4 of that agreement that:

OST will invite ASME's participation in preparing proposed regulations by regular contact between the respective staffs?

Mr. CALDWELL. Yes, sir.

Senator HARTKE. Is that not, in other words, a favored position by a group of people who are primarily either directly or indirectly employed by the pipeline companies themselves; isn't that true?

Mr. CALDWELL. No, sir. It did not put them in any different position than any other organization.

Senator HARTKE. Who else has that type of position?

Mr. CALDWELL. There is no other organization—

Senator HARTKE. What other organization? What consumer organization has a right to participate, for example? Who do you talk to as to them?

Mr. CALDWELL. Any consumer organization—

Senator HARTKE. Do you have an agreement like this with anybody else?

Mr. CALDWELL. No, sir.

Senator HARTKE. Is this not the successor of the voluntary organization that put together regulation B-31.8?

Mr. CALDWELL. It is basically the same organization that developed the basic B-31.8 standards.

Senator HARTKE. They really in substance opposed this legislation, did they not?

Mr. CALDWELL. Yes, sir.

Senator HARTKE. They opposed this legislation. Now you have entered into an agreement with an organization which opposed this legislation. Isn't that a rather remarkable thing for a Government agency to be doing?

Mr. CALDWELL. Sir, two points. One, the word "agreement," and I will have to agree that it was used—I want to state it was used in a generic sense and was probably a poor choice of words on my part. This

is not an exclusive agreement by any means. It was a matter of putting on paper what the ASME wanted their organization to do.

Senator HARTKE. Why should the Office of Pipeline Safety go ahead and propose any regulation that ASME would suggest? Why should it be as a matter of course that you will agree in advance that you will do that?

Mr. CALDWELL. Sir, you have to look at the organization——

Senator HARTKE. It is an industry group, is it not?

Mr. CALDWELL. No, sir; it is not completely an industry group.

Senator HARTKE. Tell me who are not a member of industry in that group?

Mr. CALDWELL. There are members of the Federal Government, there are members of State governments, and there are members of suppliers, manufacturers, consultants.

Senator HARTKE. Who is the member of the Federal Government on there?

Mr. CALDWELL. There is a gentleman by the name of Mr. Lewis Mendonsa from the Federal Power Commission.

Senator HARTKE. Bureau of Natural Gas, Federal Power Commission, he is one; is that right?

Mr. CALDWELL. Yes, sir.

Senator HARTKE. Who else?

Mr. CALDWELL. The Coast Guard has one member. I do not know the name.

Senator HARTKE. How many people are on this committee?

Mr. CALDWELL. Sir, I have no idea.

Senator HARTKE. We will make this all a part of the record. Just for the sake of the record, I will run down: Crane Co., Brooklyn Union Gas, Northern Natural Gas Co., Stephen Bergman, Gulf Interstate, Southern California Gas, Consolidated Gas Pipeline, Transcontinental Gas Pipeline, two of them, Columbia Gas System, Northwest Natural Gas, Southern California Gas, El Paso Natural Gas, Columbia Gas. It is an industry group.

(The letters follow:)

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., September 18, 1970.

Mr. ALLEN F. RHODES,
President, American Society of Mechanical Engineers,
New York, N.Y.

DEAR Mr. RHODES: This is to confirm the agreement between the American Society of Mechanical Engineers and the Office of Pipeline Safety as detailed in your letter of August 7, 1970, to Mr. William C. Jennings the then Acting Director of this Office. (A copy of the items of agreement is enclosed.)

I feel that this action will assist each of our respective organizations to fulfill our responsibilities.

Sincerely,

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

Enclosure.

ITEMS OF AGREEMENT BETWEEN THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AND THE OFFICE OF PIPELINE SAFETY, DOT

1. OST will encourage the publication by ASME of the Federal regulations in a document that will incorporate the design, rules, material references and

other recommended practices of the ASME code, appropriately arranged and referenced to the regulations.

2. OST will publish a notice of proposed rulemaking and request public comment on any regulatory action which is formally recommended by ASME (Mr. Jennings stated that the professional standing of the participants in ASME committee work justified this procedure.)

3. OST will invite ASME comment on requests for approval of processes, procedures, or materials to be used under the regulations, and will consider the ASME reply in making a ruling on the request.

4. OST will invite ASME participation in preparing proposed regulations by regular contact between the respective staffs.

5. OST will put the ASME code committee members on its mailing list for all public information regarding pipeline safety activities.

6. OST will furnish ASME the leak and failure-reporting information routinely developed and will cooperate in developing special studies of information in the data collection system.

7. ASME will review the operation of its pipeline code committee and its relationship with other organizations such as ANSI to ensure conformance to its safety code policy.

8. ASME will study and revise, if necessary, the pipeline code committee practices regarding documentation of, and the public record of, the background material supporting committee action on proposals for code changes and recommendations for changes, which would require changing the OST regulations.

9. ASME will put OST on its mailing list of all information which goes to the liquid pipeline and gas pipeline code committees.

SECTION COMMITTEE B31.8 GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS

SECTION COMMITTEE, B-31.8—GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS

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A. J. Shoup, *Transmission and*

W. M. Neckerman, *Materials*

Compressor Stations

J. E. Thompson, *Mechanical Design*
and Fabrication

L. L. Elder, *Review Group*

MEMBERS¹

Chester Anderson, Crane Company, 4100 South Kedzie Avenue, Chicago, Illinois 60632.

M. W. Anuskiewicz, Jr., The Brooklyn Union Gas Company, 195 Montague Street, Brooklyn, New York 11201.

P. H. Awtrey, Walworth Company, P.O. Box 758, Greensburg, Pennsylvania 15601.

Jack Baker, Northern Natural Gas Company, 2223 Dodge Street, Omaha, Nebraska 68101.

S. A. Bergman, Stephen A. Bergman Inc., 3606 West 95 Street, Leawood, Kansas 66206.

N. F. Blundell, Gulf Interstate Engineering Company, P.O. Box 1916, Houston, Texas 77001.

A. Bradfield, Southern California Gas Company, P.O. Box 3249 Terminal Annex, Los Angeles, California 90054.

J. H. Carson, Consolidated Natural Gas Service Co., Inc., Four Gateway Center, Pittsburgh, Pennsylvania 15222.

¹ Members listed as of date of letter ballot for this revision.

- J. A. Casner, The Youngstown Sheet and Tube Company, P.O. Box 900, Youngstown, Ohio 44501.
- O. W. Clark, Southern Natural Gas Company, P.O. Box 2563, Birmingham, Alabama 35202.
- A. H. Cramer, Michigan Consolidated Gas Company, One Woodward Avenue, Detroit, Michigan 48226.
- R. H. Crowe, Transcontinental Gas Pipe Line Corporation, P.O. Box 1396, Houston, Texas 77001.
- P. L. Daley, United States Steel Corporation, 525 William Penn Place, Pittsburgh, Pennsylvania 15230.
- W. H. Davidson, Transcontinental Gas Pipe Line Corporation, P.O. Box 1396, Houston, Texas 77001.
- W. C. Day, Columbia Gas System Service Corporation, 1600 Dublin Road, Columbus, Ohio 43212.
- A. J. Del Buono, Taylor Force Inc., P.O. Box 485, Chicago, Illinois.
- H. M. Dwight, Northwest Natural Gas Company, 123 N.W. Flanders Street, Portland, Oregon 97209.
- Dye, Southern California Gas Company, P.O. Box 3249 Terminal Annex, Los Angeles, California 90054.
- Eichelmann, El Paso Natural Gas Company, P.O. Box 1492, El Paso, Texas 79999.
- L. Elder, Columbia Gas System Service Corporation, 1600 Dublin Road, Columbus, Ohio 43212.
- O. D. Fink, Laclede Gas Company, 3950 Forest Park Boulevard, St. Louis, Missouri 63108.
- G. F. Fratcher, A. O. Smith Corporation, Building 65, P.O. Box 584, Milwaukee, Wisconsin 53201.
- H. H. George, Tube Turns Division, Chemetron Corporation, P.O. Box 987, Louisville, Kentucky 40201.
- J. L. Gere, Cities Service Gas Company, P.O. Box 25128, Oklahoma City, Oklahoma 73125.
- M. D. Gwinn, Consumers Power Company, 212 West Michigan Avenue, Jackson, Michigan 49201.
- W. B. Haas, Northern Natural Gas Company, 2228 Dodge Street, Omaha, Nebraska 68101.
- L. F. Hanna, Panhandle Eastern Pipe Line Company, P.O. Box 1348, Kansas City, Missouri 64141.
- W. P. Heineman, United Gas Pipe Line Company, P.O. Box 1407, Shreveport, Louisiana 71102.
- C. A. Henrikson, United States Pipe & Foundry Company, 3300 First Avenue North, Birmingham, Alabama 35202.
- E. H. Holstead, Texas Canada Pipe Lines, Ltd., 150 Eglinton Avenue, East, Toronto 12, Ontario, Canada.
- F. A. Hough, Bechtel Corporation, P.O. Box 3965, San Francisco, California 94119.
- E. V. Hunt, 2005 Hercules Dr., Colorado Springs, Colorado 80906.
- L. B. Inglis, Jr., American Gas Association, Inc., 605 Third Avenue, New York, New York 10016.
- E. J. Jandacek, Texas Gas Transmission Corporation, 3800 Frederica Street, Owensboro, Kentucky 42301.
- T. M. Jenkins, ——— Corp. Pipeline Div., 220 Bush St., San Francisco, California 94116.
- C. R. Johnson, Public Utilities Commission of Ohio, 111 North High Street, Columbus, Ohio 43215.
- E. A. Jonas, Bethlehem Steel Company, Bethlehem, Pennsylvania 18016.
- C. I. Kallina, Washington Gas Light Company, 1100 H Street, N.W., Washington, D.C. 20005.
- R. P. Lynch, The Peoples Gas Light and Coke Company, 122 South Michigan Avenue, Chicago, Illinois 60603.
- A. I. MacDonald, Kaiser Steel Corporation, P.O. Box 217, Fontana, California 92336.
- B. T. Mast, Consultant, Suite 204, 3130 Southwest Freeway, Houston, Texas 77006.
- Charles Maxwell, State of Michigan, Public Service Commission, Lansing, Michigan 48913.
- G. M. McClure, Battelle Memorial Institute, 505 King Avenue, Columbus, Ohio 43201.

- C. C. McEachern, United Gas Corporation, P. O. Box 2628, Houston, Texas 77001.
 L. W. Mendonsa, Bureau of Natural Gas, Federal Power Commission, 441 G Street, N.W., Washington, D.C. 20426.
 J. A. Millen, Southern Counties Gas Co., P. O. Box 2736, Los Angeles, California 90054.
 G. D. Mock, Washington Gas Light Company, 1100 H Street, N.W., Washington, D.C. 20005.
 W. M. Neckerman, Republic Steel Corporation, P. O. Box 6778, Cleveland, Ohio 44101.
 R. L. Oden, Taylor Forge & Pipe Works, P. O. Box 485, Chicago, Illinois 60690.
 R. R. Olson, Colorado Interstate Gas Company, P. O. Box 1087, Colorado Springs, Colorado 80901.
 M. J. Peterson, Oklahoma Natural Gas Company, P. O. Box 871, Tulsa, Oklahoma 74102.
 T. H. Pofahl, El Paso Natural Gas Company, P. O. Box 1492, El Paso, Texas 79999.
 F. W. Reinhart, Plastic Pipe Institute, 9918 Sutherland Rd., Silver Spring, Maryland 20901.
 H. P. Rogers, Consolidated Edison Company of New York, Inc., 4 Irving Place, Room 1300, New York, New York 10003.
 Maurice Royer, National Energy Board, Ottawa, Ontario, Canada.
 R. C. Seybold, Pittsburgh Testing Laboratory, 724 Central Avenue, New Orleans, Louisiana 70121.
 A. J. Shoup, Texas Eastern Transmission Corporation, P. O. Box 2521, Houston, Texas 77001.
 R. D. Smith, Pacific Gas & Electric Company, 245 Market Street, San Francisco, California 94106.
 B. W. Snyder, Canadian Western Natural Gas Company, Ltd., 140 Sixth Avenue, S.W. Calgary, Alberta, Canada.
 M. G. Spangler, Civil Engineering Department, Iowa State University of Science & Technology, Ames, Iowa 50012.
 A. W. Stanzel, Michigan Wisconsin Pipe Line Company, One Woodward Avenue, Detroit, Michigan 48226.
 H. L. Stowers, Texas Gas Transmission Corporation, P. O. Box 1160, Owensboro, Kentucky 42301.
 J. E. Thompson, Natural Gas Pipeline Company of America, 102 S. Michigan Avenue, Chicago, Illinois 60603.
 G. W. White, Tennessee Gas Pipeline Company, P. O. Box 2511, Houston, Texas 77001.
 C. J. Wilhelm, Bureau of Mines, U.S. Department of the Interior, Washington, D.C. 20240.
 F. S. G. Williams, Taylor Forge & Pipe Works, Inc., P. O. Box 485, Chicago, Illinois 60690.

(The following information was subsequently received for the record:)

OFFICE OF THE SECRETARY OF TRANSPORTATION,
 Washington, D.C., December 1, 1971.

HON. VANCE HARTKE,
*Chairman, Subcommittee on Surface Transportation, Committee on Commerce,
 U.S. Senate, Washington, D.C.*

DEAR SENATOR HARTKE: During the hearings which you conducted with respect to the several bills to amend the Natural Gas Pipeline Safety Act, you voiced your concern over an "agreement" that existed between this office and the American Society of Mechanical Engineers. At that time I stated that this relationship did not constitute an agreement nor did it confer any special privileges upon ASME.

Enclosed for your information are copies of correspondence with ASME that took place subsequent to the letter to which you were referring. As you can see, both ASME and OPS were concerned that this arrangement might be misinterpreted and, as a result, steps were taken to redefine this working relationship. I hope that these letters will clarify our situation with respect to ASME. It would be appreciated if these letters could be inserted at an appropriate place in the transcript.

You also requested information as to the number of leak reports received by telephone pursuant to our regulations. That information is as follows:

From the initiation of the telephonic reporting requirement on February 9, 1970 to December 31, 1970, telephonic notices of 333 leaks in distribution lines

and 156 leaks in transmission lines were received by the Office of Pipeline Safety. From January 1, 1971 through October 30, 1971, telephonic notices of 460 distribution line leaks and 195 transmission line leaks were received by the Office of Pipeline Safety.

If we can be of any further assistance, please call on us.

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

Enclosures.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS,
New York, N.Y., November 6, 1970.

Mr. JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety, Office of the Secretary of Transportation, Washington, D.C.

DEAR MR. CALDWELL: This will acknowledge receipt of your letter of September 18, 1970. The ASME has been very active in implementing the understanding between your office and our ASME Gas Piping Standards Committee and we are convinced that our proposed ASME Guide for Gas Piping Facilities will perform a much needed public service.

I am concerned about a minor semantic problem in this activity. The use of the phrase, "ASME/OPS Agreement" has sometimes been given the connotation of a contract between the two organizations. I'm sure you regard it, as I do, as a "working arrangement" to enable ASME to continue its contribution to the protection of the public in the area of pipeline safety. In this respect it appears to be succeeding admirably.

Sincerely yours,

ALLEN F. RHODES.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., December 4, 1970.

Mr. ALLEN F. RHODES,
President, American Society of Mechanical Engineers, Rockwell Manufacturing Co., Pittsburgh, Pa.

DEAR MR. RHODES: In your letter of November 6, 1970, you indicated your concern over the use of the term "agreement" to describe the relationship between OPS and ASME. I agree that this term gives the connotation, however unintended, that a contract may exist between the two organizations. This "agreement" was intended, as you know, to describe the actions that each organization hoped to undertake individually in order to enable ASME to continue their valuable contributions toward the improvement of pipeline safety and to allow OPS to efficiently utilize this valuable reservoir of technical knowledge.

To avoid any misinterpretations of this arrangement, we have restated the list of intended actions without attempting to characterize it. In doing so, we have made several minor changes to clarify our mutual intent and to avoid any implication of a contractual relationship. We believe the list might be better stated as follows:

1. OPS encourages the publication by ASME of the Federal regulations in a document that incorporates the design, rules, material references, and other recommended practices of the ASME code, appropriately arranged and referenced to the regulations.

2. OPS urges the ASME committee to submit recommendations to OPS in the form of petitions for rule making. The professional standing of the participants in ASME committee work would require us to give these petitions serious consideration and, anticipating that these petition would warrant issuance of a notice of proposed rule making with a request for public comment, OPS will act promptly on them.

3. OPS will invite ASME technical comment on requests for approval of new processes, procedures, or materials to be used under the regulations, and will consider the ASME reply in acting on the requests.

4. OPS will, in developing technical justification for proposed regulations, maintain regular contact between the respective staffs.

5. OPS will put the ASME code committee members on its mailing list for all public information regarding pipeline safety activities.

6. OPS will furnish ASME routinely developed leak and failure information as it becomes available and will cooperate in developing special studies of information in the data collection system.

7. ASME will review the operation of its pipeline code committee and its relationship with other organizations such as ANSI to ensure conformance to its safety code policy.

8. ASME will study and revise, if necessary, the pipeline code committee practices regarding documentation of, and the public record of, the background material supporting committee action on proposals for code changes and recommendations for changes, which would also involve changes to the Federal regulations.

9. ASME will put OPS on its mailing list for all information which goes to the liquid pipeline and gas pipeline code committees.

We believe this list more accurately reflects the original intentions of both OPS and ASME. Enclosed for your review is a comparison of the two versions. If you have any objection to the manner in which this list has been restated, please advise us.

Sincerely,

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

Mr. CALDWELL. I would like to answer the second part of your question.

Senator HARTKE. Let me tell you, I think it is poor judgment to go ahead and put the Government in that type of compromising position.

Mr. CALDWELL. In my estimation, it does not put the Government in a compromising position. Considering the technical competence of these people, if they assemble or develop a standard, I think with that much expertise and effort going into it, we should have it reviewed for possible rulemaking.

Senator HARTKE. What correspondence and discussions have you had with this organization as a result of this agreement?

Mr. CALDWELL. Well, sir, they have proposed several standards or modifications of standards, and we have some of those under review for proposed rulemaking.

Senator HARTKE. Was any change made in the rulemaking proposed on July 8, 1969, in regard to reporting gas leaks, made as a result of your conversations with this organization?

Mr. CALDWELL. No, sir, to my recollection not as an organization. They participated in the rulemaking as individual companies.

Senator HARTKE. Did they request that it be modified?

Mr. CALDWELL. Sir, the public record is full of comments on that reporting system. The ASME may or may not have commented as a unit.

The individual operators and the industry parties certainly did comment. This is the purpose of the rulemaking procedure.

Senator HARTKE. The final regulation issued was substantially weaker than the proposed rulemaking on July 8?

Mr. CALDWELL. When you say substantially weaker, it was not as published in the notices of proposed rulemaking.

I do not remember the exact modifications or changes.

Senator HARTKE. Well, the change substantially was that the distribution system first had to serve more than a hundred thousand customers before it had to be reported.

Mr. CALDWELL. Yes, sir.

Senator HARTKE. And second, it had to require immediate repair and other emergency action to protect the public, such as evacuation of a building, blocking off of an area, and rerouting of traffic. That was the only kind of leak which was required to be reported, is that true?

Mr. CALDWELL. First of all, the public record shows that initially the requirement was on the small gas company operators to report or

to do the individual investigation of these leaks required to be reported. Comments indicated that this was such a burden on them that we felt if the large operators, who had the manpower and the capability of investigating and reporting, could do it, we would focus on them for a while and see if their reports are adequate in determining the cause of leaks.

Senator HARTKE. Tell us, what is the purpose of leak reporting?

Mr. DAVIS. May I comment on that, Mr. Chairman?

Senator HARTKE. Yes.

Mr. DAVIS. We have talked a lot about this. We had over a thousand of them in 1970.

Senator HARTKE. How many miles of pipeline are there?

Mr. DAVIS. About a million and a half, I believe, sir.

Mr. CALDWELL. This covers the transmission, gathering, and distribution systems. Now, there are approximately a million miles of pipeline, less the number of miles controlled by operators with less than 100,000 customers, who are not required to file individual leak reports, and less the gathering lines in rural areas that do not report at all. I do not have that mileage available.

Senator HARTKE. Go ahead, what is the purpose of leak reporting?

Mr. DAVIS. Sir, we are trying to find out what is going on, and the overall objective in putting out this part 191.5, as I understand it at this time, was to get a report on significant leaks.

There are obviously far more leaks than those that are reported. But what we have got, we think at this particular time, is a pretty good balance between all the leaks that could be reported and those that would have meaning to us in refining existing regulations and rules.

If you notice, sir, the words that define the criteria which would be used by people in the field in making these reports would produce a report that would give us a pretty good idea of every significant leak that takes place within the United States, and I think that is what we have. That really is the objective of the report, to get significant leaks reported that can be investigated, and to find out all we can about those leaks that should be properly applied in refining our regulations.

Senator HARTKE. How many of the leaks are caused by corrosion?

Mr. DAVIS. Fifteen percent, sir, of our significant leaks, according to past records, have been caused by corrosion.

Senator HARTKE. You made a speech on October 26, 1971, to the Independent Natural Gas Association of America in San Francisco, Calif., is that right?

Mr. DAVIS. Yes, sir.

Senator HARTKE. In that speech, you said:

We found that one half of all leaks of gas facilities were caused by corrosion.

Mr. DAVIS. Yes, sir.

Mr. CALDWELL. Let me clear that up. He said that was approximately half of the leaks that are repaired, not those reported under our criteria. He said approximately, also.

Mr. DAVIS. As a matter of fact, Mr. Chairman, after I made that speech and prepared for this hearing, I raised exactly the same question you did, and as it developed we are talking about two different things, sir.

Senator HARTKE. You mean a part of the sentence was left out?

Mr. DAVIS. No, sir, Mr. Chairman. My understanding is that in some cases when you talk about leaks you might be talking about hundreds

of thousands of leaks. When we are talking about reported leaks in 1970, there were about a thousand. These are the significant leaks, so, I think that it is necessary for one to define his terms quite carefully in any statement that one makes about leaks.

Senator HARTKE. If there is a leak, as far as the net result, a bad leak is a bad leak, right?

Mr. DAVIS. A bad leak is a bad leak, and by definition here, it should be reported, because this should cover all bad leaks.

Senator HARTKE. If you have a bad leak in a small system, say, under a thousand customers, what happens then? Is that not required to be reported?

Mr. DAVIS. No, sir; only operators serving more than 100,000 customers report bad leaks.

Mr. CALDWELL. We have a requirement that under certain conditions—and if you are looking at the criteria there—telephonic reports—all companies are required to make a telephonic report immediately or as soon as practical, within a few hours, after the leak or failure occurs. We know about those incidents immediately, and we can evaluate them and follow up on them as we deem necessary. Those operators who have less than 100,000 customers are not required to fill out an individual written leak report.

However, in the annual report of their operating experience, all companies are required to give us the total leaks that occur in their systems.

Senator HARTKE. How many leaks do you think there are happening in the country? How many?

Mr. CALDWELL. Sir, I have no idea.

Senator HARTKE. You have a report of a thousand?

Mr. CALDWELL. Of 1,019 significant leaks as guided by our criteria, yes, sir. The definition of the term "leak" has never been established, and this is what we are attempting to do.

When we set up our leak reporting system, we obviously wanted to get the significant leaks or the worst ones. We wanted to know about those and evaluate them. We had no idea whether we would get information on a thousand leaks or 10,000 leaks. Nobody that we know of in Government or in industry had any idea of the number of leaks.

We are now evaluating these, and we will go ahead and modify our system until such time as we get what we think is sufficient data to determine the cause of these leaks and use the information in modifying our regulations.

Senator HARTKE. You mentioned that the Department does not object to an amendment to permit the Federal reimbursement of 50 percent of the State expenses incurred in an inspection of interstate lines because you say that the States should not be required to bear this financial burden alone. Why then did the Department advise the States that they cannot tax interstate pipelines to defray the inspection cost now?

Mr. DAVIS. Sir, it is my understanding that the act does not give that authority to the Department of Transportation, and since the Department of Transportation does not have that authority, it cannot delegate that authority or give that authority to the States.

However, it is our view that the States do have the authority to do as they will in this particular case.

Senator HARTKE. Why wouldn't you have just stayed out of that area? That is a taxation area. Why would you have moved into such an area of taxation?

Mr. DAVIS. I do not believe, sir, that we have.

Senator HARTKE. But you sent a letter to the States telling them they could not tax them. Why didn't you just let the States fight that out themselves?

Mr. DAVIS. Sir, I have not seen that letter, but if we did, perhaps Mr. Caldwell can cover it. It is my view, sir, that we were telling the States that we could not confer upon them that authority because we did not have it ourselves.

Senator HARTKE. Is that presently being contested?

Mr. DAVIS. Sir, there has been placed before me a letter to Mr. Bloom, dated March 15, 1971, Mr. Bloom, the chairman of the Pennsylvania Public Utility Commission, and it was stated quite clearly to him what I stated to you. The letter ends by saying that our statement does not affect the rights of a State or State agency to impose fees on the interstate operators under any authority that the State might possess.

Senator HARTKE. Mr. Swidler was here and he made a suggestion that you permit the States to set more stringent standards than have been set by the Federal standards. What is your opinion on that?

Mr. DAVIS. Sir, it is our view that a situation in which one State provides or creates requirements for an interstate pipeline and then another State provides another set of requirements for the same interstate pipeline would not represent a very good condition. So I do not feel that it would be a good idea for the States to have authority to levy requirements upon companies for interstate pipelines. I feel, as the act provides, this is an area in which the Federal Government should discharge its responsibility. I do feel, however, that there is room for amendment of the act, but not in the manner proposed, to have one State change the requirements for a pipeline that runs through several States.

I think that this would create a chaotic condition for a transmission pipeline operator.

Senator HARTKE. Can you tell us how many accident reports you received by telephone pursuant to your regulations?

Mr. CALDWELL. We do not have that number available, sir. I can furnish it to you.

(The following information was subsequently received for the record:)

The information requested is as follows: From the beginning of the telephonic reporting requirement on February 9, 1970, to December 31, 1970, we received telephonic notices of 333 leaks in distribution lines and 156 leaks in transmission lines. From January 1, 1971 through October 30, 1971, we received telephonic notices of 460 distribution line leaks and 195 transmission line leaks.

Senator HARTKE. How many deaths and injuries in 1971 to date?

Mr. CALDWELL. As reported under part 191, which again is the criteria for the significant leaks involving injuries and fatalities for the first 6 months of calendar year 1971—I do not have the third quarter—we have 31 fatalities and 243 injuries for the total gas industry.

Senator HARTKE. Did you investigate all those cases involving fatalities and injuries?

Mr. CALDWELL. No, sir; we did not.

Senator HARTKE. How many did you investigate?

Mr. CALDWELL. I do not have that before me, sir. When you say did we investigate, I assume you mean the Office of Pipeline Safety. In

the area of accident investigation, we have a very close relationship and communication with the State agencies and the National Transportation Safety Board. If one or the other organizations is going to get involved, we certainly respect their area of responsibility and their integrity and rely on them to investigate. We try not to overlap because we just do not have that kind of manpower.

Senator HARTKE. Am I incorrect if I say that you only investigated one accident this year?

Mr. DAVIS. Mr. Chairman, no, sir; my records show that we have investigated five, sir. One in Miami Beach, one in Baltimore, one in New Jersey, one in Pennsylvania, and another in New Jersey. There were 13 deaths and 98 injuries in three of the five accidents we investigated.

Senator HARTKE. Senator Beall.

Senator BEALL. Thank you, Mr. Chairman. This question is for either General Davis or Mr. Caldwell. Representatives of the State have testified, that they thought there ought to be greater opportunity for State control of the situation. Are you satisfied that the Federal regulations are sufficient to provide the kind of safety or the kind of protection that is necessary for the consumers?

Mr. DAVIS. Senator Beall, I do not think we know the answer to that question at this particular time, sir. I personally have studied the Natural Gas Pipeline Safety Act, very carefully, and I think I am going to have to go out and see a lot that goes on in the field before I am able to provide you with what I would consider to be a proper answer to that question.

Senator BEALL. In answering that question for yourself, it would appear that the States have some experience perhaps in this whole matter that the Federal Government does not have, since they have been involved in regulating pipelines to a greater or lesser extent as the case may be from State to State. Does your Department frequently consult with the several States to determine what the regulations should be and to determine the degree of participation that one might expect from the States in this regard?

Mr. DAVIS. The answer, sir, is a very strong yes. As I expressed earlier to the chairman, sir, it is our philosophy that we should place very great reliance on the State operation. As a matter of fact, sir, although I am not prepared to give an unqualified response today, in the back of my mind I feel that we should place even greater responsibility from a statutory standpoint in the States and less responsibility in the hands of the Federal Government. But I do not really know—

Senator BEALL. Do you mean from an enforcement standpoint or from the promulgation of standards?

Mr. DAVIS. I mean in an overall standpoint, sir. I believe, sir, that we should be engaged in the interstate pipeline business. I believe that we should have our Federal standards. I think we should change our Federal standards from time to time as our knowledge increases. But I feel that for implementation there should be a strong Federal Government-State agency relationship in which we place a lot of reliance on the States in their implementation. Otherwise I believe that our manpower requirements would be far too great.

Senator BEALL. How would you feel about letting the States go ahead at this time and propose more stringent standards than the Federal Government? What would this do to your program?

Mr. DAVIS. Sir, I addressed myself already to that portion of your question that pertained to the interstate pipelines. But to the other pipelines, there is no bar to their providing more stringent requirements than we have provided.

Senator BEALL. With regard to the 1,000 leaks that were mentioned earlier that were reported, I am somewhat new to this subject matter, and the word "significant" leak and "bad" leak has been used here. When is a leak significant and when is it not significant?

Mr. DAVIS. I paid a lot of attention to this, and I believe I can cover this immediately, sir, by reading to you the requirements for making the report. Basically the requirement is, No. 1, a report is made if the leak caused a death or personal injury requiring hospitalization; if it required the taking of any segment of a transmission pipeline out of service; if it resulted in gas igniting; if it caused estimated damage to the property of the operator or others or both of a total of \$5,000 or more; or in the judgment of the operator was significant even though it did not meet the criteria that I have read. And that relates to the telephonic notice of certain leaks.

Now, we break this down, as the chairman referred to it earlier, in the case of the distribution system. The operator of a distribution system serving more than 100,000 customers shall report in writing, on form DOT-F-7100.1, a leak that required notice by telephone, as I have described earlier, a leak that because of its location required immediate repair or other immediate action to protect the public, such as evacuation of a building, blocking off of an area or rerouting of traffic, or when additional related information is obtained after a report.

We require a report, in other words, under conditions that we think represent a danger to the public of such magnitude that we might learn something from it and cause us to amend our regulation.

Senator BEALL. Are you satisfied that the 1,000 reports that you got are all of the so-called significant leaks or bad leaks?

Mr. DAVIS. I am positive that the thousand that were reported were significant, but I am not satisfied that all others were not significant.

Senator BEALL. What do we do about that situation?

Mr. DAVIS. Sir, we are going to have to look and see and determine whether we should change these regulations and require additional reporting in the manner that was brought out by the chairman, perhaps. Perhaps in another manner.

Senator BEALL. What I am getting at is you are relying almost totally on the willingness of the people who had the leaks in their system to report the leaks to you, are you not?

Mr. DAVIS. Yes, sir.

Senator BEALL. So, since you do not have enough people to enforce the regulations you now have, you really do not know whether you are getting at the problem, do you?

Mr. DAVIS. Well, sir, I would say a significant leak would not go unnoticed, and I believe that, since it would not go unnoticed, those responsible for it would be more likely to report it since they are familiar and do have these regulations.

Senator BEALL. I will not be argumentative. But I am still not sure that I understand what a significant leak is. Still it seems to me almost any gas leak is significant.

Mr. CALDWELL. Let me go one step further and tell you what our plans are. As I said earlier, when we established the leak reporting requirements, we had to make a decision based on our best information and judgment to try to get a sampling of leaks to determine their cause. When you set up a new system—we are developing an automatic data processing system for each and every leak. First of all, we want the significant leaks, and No. 2, we have to arbitrarily draw a line to get a representative sampling and keep the number manageable. Again it was an educated guess—or an uneducated guess, however you want to put it—that we would get a small number to look at to start with.

After the end of this reporting year, which will be January, we will have 2 years' reporting experience. We have a plan underway to evaluate our leak reporting system and see if, as the General said, we are getting the types of leaks reported that we feel we should in order to better monitor and develop our regulations.

So the program is under review, but we had to get some operating experience so that we know where we stand.

Senator BEALL. Granted you have to have the experience in order to move ahead and establish regulations, but I trust you also plan to move ahead in enforcing those regulations, do you not?

Mr. DAVIS. Senator, we have limited personnel, but the act requires enforcement. I have asked Mr. Caldwell to create a system in which the people in his office based here in Washington are divided up into teams, and these teams are scheduled for enforcement-monitorship trips to carry out our enforcement function within our limited resources to the best of our ability.

Senator BEALL. To what extent is your ability limited by your resources?

Mr. DAVIS. It is limited, sir, by the number of people that we have.

Senator BEALL. I know that, but how does this seriously affect your ability to carry out the stated purpose of the Act?

Mr. DAVIS. Only, sir, from the standpoint of enforcement, because this takes people out. We would like, sir, to establish field offices.

Senator BEALL. You need more money, is that the point?

Mr. DAVIS. No, sir.

Senator BEALL. You do not?

Mr. DAVIS. No, sir. What we need is more people and we need the people stationed out in the field near the gas operators that they can visit and inspect.

Senator BEALL. You have the money to get the people?

Mr. DAVIS. No, sir, we are—

Senator BEALL. Then you do need more money?

Mr. DAVIS. Yes, sir, we need the authorization for the people, the authorization for the money, and the money.

Senator BEALL. Thank you, Mr. Chairman.

Senator HARTKE. Do you consider the *Baker* case closed?

Mr. DAVIS. No, sir. We are awaiting the printed testimony of the hearing from the State of Oklahoma, and it is my understanding, Mr. Chairman, that it is perhaps due on November 15.

Senator HARTKE. Thank you.

The committee is adjourned.

(Whereupon, at 3:30 p.m., the hearing was adjourned, subject to call of the Chair.)

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS
POSITION OF ASSOCIATION OF OIL PIPE LINES AND THE DEPARTMENT
OF TRANSPORTATION RESPONSE

ASSOCIATION OF OIL PIPE LINES,
Washington, D.C., January 21, 1972.

Subject: Gas pipeline safety bills, H.R. 5065, S. 980 and S. 1910.

Hon. VANCE HARTKE,

*Chairman, Subcommittee on Surface Transportation, Committee on Commerce,
U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: This comment of the Association of Oil Pipe Lines (AOPL) is directed toward a proposal advocated in testimony before the Subcommittee on Surface Transportation on November 9, 1971, in hearings on "Gas Pipeline Safety," dealing specifically with H.R. 5065, S. 980 and S. 1910.

Each of these three bills would make technical amendments to the Natural Gas Pipeline Safety Act of 1968. In the form in which it passed the House, H. R. 5065 would extend for two years, until August 12, 1972, the time during which the states may qualify to enforce Federal safety standards established pursuant to the Natural Gas Pipeline Safety Act of 1968, would make it mandatory upon the Secretary of Transportation to pay to the states grants-in-aid of up to 50 percent of the cost of state safety programs, and would authorize the appropriation of funds for enforcement of the Act. S. 980 and S. 1910 deal with similar subject matter, and the Subcommittee held joint hearings on the three bills.

Each of the three bills deals solely with the Natural Gas Pipeline Safety Act, and the hearings have been referred to as "Gas Pipeline Safety" hearings. On November 9, 1971, two witnesses, the Honorable Benjamin O. Davis, Jr., Assistant Secretary of Transportation for Safety and Consumer Affairs, and the Honorable John H. Reed, Chairman of the National Transportation Safety Board in their testimony in support of this legislation, also recommended an amendment which would add a new section dealing with a completely new subject which did not appear in any of the bills as introduced, or in H.R. 5065 as that bill passed in the House. The proposed amendment is as follows:

"Section 6(f) (3) (A) of the Department of Transportation Act (49 U.S.C. 1655(f) (3) (A) is amended by deleting the words 'and pipeline'."

The proposed amendment, if adopted, would amend the Department of Transportation Act to make it possible for the Secretary of Transportation to transfer the existing functions of the Federal Railroad Administrator relating to oil pipeline safety to the Office of Pipe Line Safety, which presently has jurisdiction only over gas pipeline safety. Although the bills which are the subject of the hearing were introduced to amend the Natural Gas Pipeline Safety Act of 1968, the proposed amendment to the bills would amend an altogether different statute, the Department of Transportation Act. The proposed amendment would affect the oil pipeline industry, which is not and has never been subject to the Natural Gas Pipeline Safety Act of 1968, and which heretofore has not been concerned with the Gas Pipeline Safety hearings. It is now submitted that the proposed amendment should not be adopted in haste, and without full consideration of complications it would create, affecting the oil pipeline industry. In this connection, it should be pointed out that while H.R. 5065 was before the House Committee on Interstate and Foreign Commerce, the Acting General Counsel of

the Department of Transportation, by letter of March 24, 1971, to Chairman Staggers, urged that the bill be amended by the Committee to include the provision quoted above. The House Committee *rejected* this recommendation in reporting H.R. 5065 on June 2, 1971, in the form in which it passed the House on June 21, 1971.

AOPL is a voluntary unincorporated association composed of substantially all of the interstate, common carrier oil pipelines in the United States. The eighty members of AOPL transport over 97% of the crude oil and petroleum products moved by pipeline in this country. They do not buy or sell crude oil or petroleum products but merely transport those commodities, as common carriers, for their customers. An oil pipeline system of more than 200,000 miles is required to perform the service. As interstate common carriers, oil pipelines are subject to Part I of the Interstate Commerce Act, and thus to economic regulation by the ICC.

The oil pipelines are subject to safety regulation under the provisions of the Transportation of Explosives Act, U.S. Code Title 18, Sections 831-837, under which originally the Interstate Commerce Commission was empowered to issue safety regulations which are binding upon contract or private carriers by land, as those terms are used in the Interstate Commerce Act. Oil pipelines have been covered by the Transportation of Explosives Act since 1965. When the Department of Transportation Act was enacted in 1966, the functions of the ICC relating to railroad and pipeline safety were transferred to the new Department, but with the express direction from Congress that "the Federal Railroad Administrator shall carry out the functions, powers, and duties of the Secretary pertaining to railroad and pipeline safety . . ." (49 U.S.C. 1655(f)(3)(A)). It is this specific statutory mandate, which the proposed amendment to the existing bills is designed to change. It should be noted that the Federal Railroad Administration has discharged the statutory responsibility placed on him. On September, 29, 1969, after lengthy and complete hearings, that office issued a comprehensive code of regulations on oil pipeline safety, which became effective April 1, 1970. On three separate occasions since that date, amendments to the code have been promulgated by the Federal Railroad Administrator. Thus there is in being an effective system of safety regulation of oil pipelines.

The Transportation of Explosives Act has never applied to gas pipelines. Congress enacted the Natural Gas Pipeline Safety Act of 1968 to deal with the subject of gas pipeline safety regulation. That statute is administered by the Office of Pipe Line Safety which is located within the Department of Transportation. The Natural Gas Pipeline Safety Act of 1968 has no application to the oil pipelines.

Enactment of the amendment advocated in the recent testimony creates problems which have not been considered in the record which is now before the Committee. While it is true that there are points of similarity between the physical facilities of oil pipelines and of gas pipelines, there also are important differences in the physical facilities and operations of the two types of pipelines, and, of equal importance, in the physical characteristics of the commodities transported. There are significant dissimilarities, as well as similarities, in the technical problems of the two industries.

The witnesses, in supporting the amendment to H.R. 5065, argued that the Department has learned that the technical aspects of liquid pipeline safety are substantially the same as the technical aspects of gas pipeline safety. We believe there are also sufficient technical dissimilarities that support continued separation of the decision-making authority for those two modes of transportation.

Natural gas is transported in a gaseous state rather than as a liquid. In the operation of a gas pipeline system, the gas is compressed, which results in temperature build-ups and high stored energy in the gas on the discharge side of compressor stations. On the other hand, the liquids in a liquid pipeline system are virtually non-compressible, and, therefore, do not create high temperature or energy build-ups on the discharge sides of stations. This compressibility with its

high energy storage characteristic of natural gas creates an entirely different problem when there is a line rupture, in that when a rupture occurs the pressure and total energy required for gas compression of the system is released at the point of rupture. In a liquid line, when a rupture occurs, the operating pressure drops to nearly zero pressure at the point of rupture with only a nominal energy expenditure at that point. These are but some of the reasons why the gas pipeline industry and the oil pipeline industry have completely separate, and in many respects different, industry codes, which, in each case, are prepared by separate groups composed of different industry-government experts.

Moreover, there are substantial differences in the provisions and in the philosophies of the Transportation of Explosives Act, and of the Natural Gas Pipeline Safety Act. The Transportation of Explosives Act provides criminal penalties for the violation of regulations issued under its authority. The Act contemplates the issuance by the Federal Railroad Administrator of regulations which are the same in each state. Also, when it enacted the Department of Transportation Act, Congress wisely placed responsibility for oil pipeline safety regulation in an administrator who has had some exposure to problem of economic regulation of railroads and of oil pipelines, both of which are subject to Part I of the Interstate Commerce Act.

On the other hand, the Natural Gas Pipeline Safety Act of 1968 provides civil, but not criminal penalties for violation of regulations issued under its provisions. Moreover, in contrast to the Transportation of Explosives Act, the Gas Pipeline Safety Act contemplates some measure of state responsibility for gas pipeline safety. As is demonstrated by H.R. 5065, S. 980 and S. 1910, the Gas Pipeline Safety Act makes it possible for state gas pipeline safety regulation to be applicable under various conditions.

In short, the two statutes are so different in history, in philosophy, and in machinery for developing and issuing regulations that completely different approaches must be taken by the Government officials entrusted with responsibility for issuing regulations under the two statutes.

It has been suggested that the duties of the Federal Railroad Administrator relating to oil pipeline safety should be combined in the Office of Pipe Line Safety with the office's responsibilities under the Natural Gas Pipeline Safety Act because the Office of Pipe Line Safety at present provides technical expertise upon which the Federal Railroad Administrator has relied in preparation of his existing oil pipeline safety regulations. What appears initially to be the logic of this suggestion loses force when it is noted that the technical competence of the Office of Pipe Line Safety has been made available to the Federal Railroad Administrator, heretofore, who has utilized this expertise, under the existing organization of the Department. The system is functioning effectively under present conditions, and no facts have been offered to show that either efficiency or economy would be served by consolidation of the two offices.

It is respectfully submitted that the proposed amendment would significantly expand the scope of H.R. 5065 and the other bills beyond the subject of gas pipeline safety. We believe that the amendment should not be adopted in haste and without full consideration of its effect upon an industry which is not covered by the Natural Gas Pipeline Safety Act of 1968. Such consideration is not possible on the basis of the record before the Committee as it exists at this time.

Very truly yours,

J. D. DURAND.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., March 31, 1972.

Senator VANCE HARTKE,
Chairman, Surface Transportation Subcommittee, Committee on Commerce, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: I appreciate the opportunity to submit comments on the letter you received from the Association of Oil Pipe Lines (AOPL). The AOPL comments relate to the proposal to transfer safety regulatory jurisdiction over

liquid pipelines from the Federal Railroad Administration of this Department to the Secretary of Transportation. The Department has proposed to consolidate the liquid pipeline safety function with the natural gas pipeline safety function in the Office of Pipeline Safety (OPS).

A chronological summary of the Department's views is enclosed.

If I can be of further assistance, please let me hear from you.

Sincerely,

VINCENT F. DECAIN

(For BENJAMIN O. DAVIS, JR.,

Assistant Secretary for Safety and Consumer Affairs).

Enclosure.

DEPARTMENT OF TRANSPORTATION VIEWS ON NEED FOR CONSOLIDATION OF LIQUID AND GAS PIPELINE SAFETY FUNCTIONS IN THE OFFICE OF THE SECRETARY, DEPARTMENT OF TRANSPORTATION

The proposal to transfer the authority for safety regulation over liquid pipelines stemmed in part from the statutory requirements of the Department of Transportation Act and in part from subsequent legislation and related developments. In this regard, the Department of Transportation Act transferred the liquid pipeline safety function from the Interstate Commerce Commission (ICC) to the DOT and expressly vested that function in the FRA. That Act specifically provided (Section 3(e)(4)) that this function could not be transferred within the Department unless provided for by a reorganization plan or statute. Hence, congressional approval of this particular transfer will be required.

Following enactment of the Natural Gas Pipeline Safety Act of 1968 and the creation of the Office of Pipeline Safety to administer that Act, the Department initially considered the feasibility of consolidating the gas and liquid pipeline safety functions in the Office of the Secretary. The interest was supported by actions taken by the House Committee on Appropriations, in reporting on the Department of Transportation and related agencies appropriation bill, 1970 (91st Congress, First session, H. Rep. No. 91-642, dated November 13, 1969). Although the 1970 budget for the Federal Railroad Administration requested \$150,000 and five positions for oil pipeline safety, the House Committee on Appropriations denied that request. The Committee report, on page 26, contains the following statement:

"The Act establishing the Department of Transportation assigned to the Federal Railroad Administration the responsibility for carrying out the functions, powers, and duties of the Secretary pertaining to oil products pipeline safety. The budget for this Bureau requests \$150,000 and 5 positions for oil pipeline safety. No funds are provided for this program under the Bureau of Railroad Safety in contemplation of its being merged with the Office of Pipeline Safety in the Office of the Secretary. That office is responsible for the administration of the Natural Gas Pipeline Safety Act of 1968. Because of the similarities existing in these two programs, it is apparent that their consolidation should provide for more efficient administration. The Committee is providing 5 additional positions for the Office of the Secretary with the intention that the Office of Pipeline Safety administer both the oil products and the natural gas pipeline safety functions. The Department has been considering the proper organizational placement of these functions. A firm decision on this matter should be made promptly."

In furtherance of that report, the Department of Transportation created a special task force to review the desirability of the consolidation urged by the House Appropriations Committee. The task force provided representatives of the oil pipeline industry with an opportunity to present the views concerning the proposal, and the Association of Oil Pipe Lines made its opposition to the consolidation known to the task force. Nevertheless, the task force recommended that the liquid pipeline safety function be consolidated with the gas pipeline safety function in OPS.

On March 24, 1971, following completion of the task force report, the Department submitted to the House Committee on Interstate and Foreign Commerce and the Senate Committee on Commerce the proposed wording of legislative language to provide for this transfer, and recommended that the language be included in H.R. 5065. It is the Department's understanding that its March 24, 1971, letter was received by the House Committee after the Subcommittee on Communications and Power had already acted on H.R. 5065, and that the Committee decided not to consider the proposal when it acted on the Subcommittee

recommendation. There is no record that either the Subcommittee on Communications and Power or the Committee on Interstate and Foreign Commerce actually rejected the proposal, as suggested in the AOPL letter. It is our understanding that the House Committee simply has not considered the proposal.

AOPL is against the transfer because, it suggests, there are a number of dissimilarities between liquid pipelines and gas pipelines. The fact that some dissimilarities do exist is recognized by the Department. However, it can also be said that insofar as safety regulation is involved greater dissimilarities exist between railroads and liquid pipelines than between gas pipelines and liquid pipelines.

Furthermore, during the past several years, the Congress has enacted statutes—such as the Federal Railroad Safety Act, the Rail Passenger Service Act, and the Emergency Rail Services Act—which have imposed on FRA substantially increased responsibilities with respect to the railroad industry. Under these circumstances, it can also be said that the liquid pipeline safety function, including safety regulation of the Alaskan pipeline, could be more effectively administered by an organization whose only responsibility is pipeline safety.

The AOPL also suggests that retention of the function in FRA is appropriate because the FRA has had some exposure to the problems of economic regulation as distinguished from safety regulation. The legislative history of the DOT Act indicates that the administrative procedures normally followed for economic regulation are quite different from those used in safety regulation. The Congress determined that there were desirable results in divorcing safety regulation—which is a quasi-legislative function—from economic regulation, which is more judicial in nature.

The AOPL also cites differences between the legislative authorization for safety regulation of liquid pipelines as compared with the legislative authorization for safety regulation of gas pipelines. The Department recognized these differences, and is willing to work with the Association in recommending to Congress appropriate legislation which will remove the stigma of criminal penalties for violations of liquid pipeline safety regulations.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., February 24, 1972.

HON. VANCE HARTKE,
U.S. Senate,
Washington, D.C.

DEAR SENATOR HARTKE: With special reference to my testimony before your Subcommittee on November 9, 1971, concerning S. 980, S. 1910 and H.R. 5065, I would appreciate early enactment of legislation to amend the Natural Gas Pipeline Safety Act of 1968. In addition to our comments proposing the amendments and my statements during the Hearing, I would like to bring other additional observations to your attention.

My testimony indicated that the Department recommended a continuing authorization for appropriations without a ceiling on the amount that might be appropriated for any fiscal year, but that it would not object to the ceilings in Section 3 of H.R. 5065 if the Congress considers that method of financing more desirable.

You may also recall that in its testimony, the National Association of Regulatory Utility Commissioners (NARUC) recommended that the Act be amended to permit the States to impose, on interstate gas transmission facilities, safety standards in addition to or more stringent than the Federal safety standards that apply to such facilities. In my response to a question raised by Senator Beall, I expressed the belief in Federal standards, with reliance on the States for their implementation. I also indicated that there may be room for an amendment to the Act, but not in the manner proposed by NARUC.

When the Department initially developed the Federal safety standards, we reviewed the safety standards that each State had in effect on August 12, 1968. We learned that almost all of the States had adopted some version of the USASI B31.8 Code, and that a few States had also imposed additional or more stringent standards. In each instance where an additional or more stringent standard was imposed, we contacted the State agency for supporting data. Based on all of the data received, beginning in November 1969, the Department issued a series of proposed Federal safety standards, which were published in the Federal Register and given additional widespread distribution. Each State regu-

latory utility commission received copies of the proposed standards for comment. The Department reviewed comments received from all sources and made salutary modifications to the standards before they were published.

Since some of the States have expressed the view that certain features of the Federal safety standards applicable to interstate gas facilities are inadequate, we are reviewing the entire record to determine whether any revisions should be proposed. Furthermore, I intend to pursue this question with the NARUC Executive Committee at its next meeting on March 1-2, 1972. I would like to seek a solution to any problems that even a few States may have through existing authority and regulatory procedures before I recommend what might develop to be an unneeded amendment to the Act.

NARUC testimony also raised questions regarding a Department of Transportation policy statement concerning the effect of the Natural Gas Pipeline Safety Act on State authority to assess fees or charges against interstate gas transmission operators. The enclosed copy of a letter from Mr. Joseph C. Caldwell, Acting Director, Office of Pipeline Safety, to Mr. Paul Rodgers, General Counsel of NARUC, dated February 17, 1972, should help clarify the situation.

If you have any questions concerning the Department's views on the need for enactment of this legislation, please let me hear from you.

Sincerely,

BENJAMIN O. DAVIS, Jr.,
Assistant Secretary for Safety and Consumer Affairs.

Enclosure.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., February 17, 1972.

Mr. PAUL RODGERS,
General Counsel, National Association of Regulatory Utility Commissioners,
Interstate Commerce Commission Building, Washington, D.C.

DEAR MR. RODGERS: This letter supplements General Davis' letter of December 17 in reply to your letter of December 9, 1971, in which you raised certain questions with respect to the Department's interpretation of the Natural Gas Pipeline Safety Act. As General Davis indicated in his earlier reply, he asked the Office of Pipeline Safety and the Office of the General Counsel to review the Department's position, taking into account your analysis of the problem. We have completed that review and have found that we should modify our position.

First, I think you should know about the concern with which we approached our review. We fully appreciate the need for active cooperation between State and Federal authorities in the administration of the Act. We further appreciate the need for all of us to devote our full energies to improvements in gas pipeline safety, not to disagreements among ourselves. In short, we took to heart the sentiments expressed by General Davis in his letter of December 17 and his additional instructions to do everything we could to develop a working relationship with the States which would enable State and Federal authorities to move forward together toward our common goal.

As we began on our review, it was readily apparent that the Department's position, stated in my letters dated October 30, 1970, September 1, 1971, and September 28, 1971, was an impediment to cooperation between State and Federal authorities. In analyzing the developments which led us to provide by regulation for the establishment of the agency relationship and the events since then, we were concerned with two questions. The first question was whether in permitting States to serve as our agents with respect to interstate transmission facilities as provided for by regulations (49 CFR 190.6), we could also delegate to a State agency the authority to assess fees against interstate gas operators for their service. The answer obviously was, and still is, that we cannot do so.

The second question was whether or not the Act either expressly or impliedly prohibits a State from assessing fees against interstate operators. Upon review of this question and a thorough analysis of the statutory language and legislative history of the Act, the Department's General Counsel determined that the expressed preemption in Section 3 relates only to the establishment of safety standards and State actions necessarily associated with the establishment of safety standards. He concluded that this express preemption did not extend to other State activities such as taxation or assessments. He further indicated that considering the overall objectives of the Act, there was no basis for implying an intent on the part of Congress to preempt the authority of States to tax

assess, or impose fees on interstate operators. Based upon this interpretation, it is the Department's position that in adopting the Act Congress did not either expressly or impliedly preempt the power of the States to raise funds.

The General Counsel did note that there may be other legal bases upon which States statutes could be found invalid, such as, for example, imposition of an unreasonable burden on interstate commerce or discriminatory taxation. However, these are not matters which hinge on his interpretation of the Act.

Our primary concern is to assure that the State agencies who are acting as our agents with respect to interstate facilities do so in accordance with the authority which the Department has given to them. Other questions which may arise between the State agencies and the interstate operators are best left to resolution between those parties. The Department does not intend to become involved in such questions except to the extent that it appears necessary for our administration of the Natural Gas Pipeline Safety Act.

I trust that you will find this a satisfactory response to the points raised in your letter to General Davis. In particular, I hope that you will find it evidence of our sincere desire to work cooperatively with the States. If you have any further questions on this subject or in any other aspects of our Federal/State relations, please let me know.

Sincerely,

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS,
Washington, D.C., December 9, 1971.

Hon. BENJAMIN O. DAVIS, Jr.

Assistant Secretary for Safety and Consumer Affairs, U.S. Department of Transportation, Washington, D.C.

DEAR GENERAL DAVIS: Congratulations upon your appointment as the Assistant Secretary for Safety and Consumer Affairs. I wish you Godspeed in your great quest to significantly improve the safety of our national transportation system and to enhance the role of the consumer therein. I am confident that your dedicated efforts in this endeavor will fulfill the high expectations of the Secretary and your other colleagues in government.

I pledge to you the wholehearted cooperation and support of the National Association of Regulatory Utility Commissioners (NARUC) in the accomplishment of your mission.

STATE INSPECTION COSTS FOR INTERSTATE PIPELINES

I wish to respectfully bring to your attention at this time a matter of pressing concern which seriously affects the ability of State commissions to adequately finance their efforts to cooperate with you in the enforcement of Federal safety standards applicable to interstate gas pipelines.

The enclosed copies of correspondence document the latest effort by Joseph C. Caldwell, Acting Director of the Office of Pipeline Safety (OPS), Department of Transportation, to in effect undermine the programs of West Virginia and other States to enforce the Federal safety standards applicable to interstate gas pipelines.

Although Mr. Caldwell only has two field inspectors to police approximately 224,000 miles of interstate gas pipelines nationwide, he nevertheless has sided with the big pipelines by contending that the States do not have the inherent authority to assess them to defray the cost of State safety inspections of the pipelines. Mr. Caldwell's support of the interstate pipeline industry's position on this issue has discouraged the States from enforcing Federal safety standards and has resulted in one large State—Pennsylvania—ceasing altogether to enforce such standards as applied to the interstate pipelines.

LEGISLATIVE HISTORY

The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C.A., Sec. 1671, *et seq.*) required the Secretary of Transportation to adopt minimum safety standards applicable to all distribution, interstate pipeline and non-rural gathering systems within the Nation. Under Section 5 of the Act, a State agency which

adopts the Federal safety standards as a minimum and which has the ability to effectively enforce these standards, is permitted to administer a comprehensive safety program within that State with respect to gas systems other than interstate pipelines. State adoption and enforcement of the Federal standards are reflected by a State agency annually submitting to the Secretary of Transportation a certificate accompanied by supporting information depicting the State program. If the Secretary finds that the State performance is inadequate, he may reject the certificate and assert direct Federal regulation.

EFFORT TO ENFORCE FEDERAL INTERSTATE PIPELINE SAFETY STANDARDS

DOT on November 7, 1968, issued the first Federal safety standards governing gas systems. 49 CFR, Part 190. Since DOT did not have an effective field enforcement staff at that time (or since then), it invited the State agencies not only to participate through Section 5 certification procedures as to distribution systems, but also to act as the agent of DOT in exercising surveillance over the safety programs of the interstate pipelines. 49 CFR, Sec. 190.6.

At the present time the following twenty-two jurisdictions have assumed this added responsibility:

Connecticut	Montana	Virginia
Florida	New Hampshire	Washington
Iowa	New Jersey	West Virginia
Kansas	North Carolina	Wisconsin
Kentucky	Ohio	Wyoming
Maryland	Oklahoma	District of Columbia ¹
Massachusetts	Rhode Island	
Michigan	Utah	

However, these State safety programs for the interstate pipelines have been dealt a severe blow by several letters written by Mr. Caldwell advising State agencies that they no longer possess the authority to assess fees against interstate pipelines to defray the cost of their inspection and surveillance activities.

THE TENNECO-WEST VIRGINIA INCIDENT

The latest incident involves a dispute between Tenneco, Inc., and the West Virginia Public Service Commission.

The Secretary of the West Virginia Commission by letter of August 3, 1971, transmitted an order to the Tennessee Gas Pipeline Company, a wholly owned subsidiary of Tenneco, Inc.,² requiring it to show cause why it should not pay an annual license fee in the amount of \$2,321.93 for the support of the Commission's Gas Pipeline Safety Division.

On August 9, 1971, Jerry P. Fortenberry, Assistant General Counsel for the Tennessee Gas Transmission Company, another wholly owned subsidiary of Tenneco, Inc.,³ wrote a letter to Mr. Caldwell complaining of the West Virginia assessment of \$2,321.93 and requesting his intercession to overturn the assessment.

Although under no obligation to intercede, Mr. Caldwell by letter of September 1, 1971, advised West Virginia that there was no legal basis for the assessment. Mr. Caldwell made two points.

¹ Third Annual Report of the Secretary of Transportation on the Administration of the Natural Gas Pipeline Safety Act of 1968, Calendar Year 1970, Appendix 8.

² Standard and Poor's Corporation Records, p. 5355.

³ *Ibidem*.

First, he said that, since DOT had no authority to assess interstate pipelines, State agencies could not thereby obtain authority to assess interstate pipelines because under the agency relationship an agent could not be delegated authority which the principal did not possess. This point is not contested.

However, Mr. Caldwell made a second point which is vigorously contested by West Virginia and other States. He said, "Similarly, if the fee is intended for safety purposes of the Commission in its own right, there can be no legal basis for it because the Natural Gas Pipeline Safety Act of 1968 preempted safety jurisdiction over all interstate gas facilities and vested that jurisdiction in the Department of Transportation."

We disagree. West Virginia, as agent of DOT, has the right to inspect the safety of interstate pipelines. This requires the expenditure of State revenues and the State has the inherent right to raise this revenue by taxes or assessments. There is no significant difference between deriving the needed revenues from the State treasury or from State assessments of interstate pipelines to defray the cost of safety regulation.

West Virginia advised Mr. Caldwell by letter of September 13, 1971, that "Should DOT and the interstate companies insist upon forcing this prohibition, this Commission may have to reconsider its decision to participate in the federal gas pipeline safety program."

Mr. Caldwell responded on September 28, 1971, to this probable loss of any government gas safety regulation in West Virginia by succinctly reaffirming the views stated in his September 1st letter.

Aside from its highly controversial legal aspects, the letter also reflects inpropriety by Mr. Caldwell as the Federal official directly in charge of the national gas safety program. Here Mr. Caldwell has voluntarily intervened at the request of the mammoth Tenneco to overturn a \$2,321.93 assessment vitally needed by West Virginia to protect the safety of its people with respect to gas pipelines.

Tenneco is ranked by *Fortune Magazine* as the 34th largest industrial corporation in the Nation.⁴ Tenneco is currently described in Standard and Poor's Corporation Records as being "a natural gas pipeline operator with diversified interests in integrated oil, chemical, packaging, manufacturing, shipbuilding, and land use businesses and holds related investments in the insurance and banking fields."⁵

Tenneco has a capitalization of \$1.8 billion,⁶ total assets of \$4.4 billion,⁷ and consolidated earnings of over \$79 million for the six months ending June 30, 1971.⁸

CONCLUSION

In view of the enormous resources of Tenneco as contrasted with the thin resources of government committed to strengthening national gas pipeline safety, we respectfully urge your intervention to reverse the position taken by Mr. Caldwell in this important matter of public safety.

With warm personal regards and best wishes, I am

Sincerely yours,

PAUL RODGERS,
General Counsel.

⁴ *Fortune Magazine*, Directory of The 500 Largest U.S. Industrial Corporations, May 1971, p. 172.

⁵ Page 5355. This report on Tenneco further states that "Of 1970 revenues, pipeline operations provided 23.2%, integrated oil 16.7%, chemicals 9.7%, packaging 9.9%, manufacturing and shipbuilding 34.4%, land use and other 6.1%."

⁶ Standard and Poor's Corporation Records, p. 5355.

⁷ Consolidated Balance Sheet as of June 30, 1971, as reported in Moody's Public Utility News Reports, September 24, 1971, p. 1892. The exact figure is \$4,391,009,000 and six months earlier (December 31, 1970) its total assets were reported at \$4,343,792,842 which means an increase of over \$48 million in only six months! Moody's Public Utility News Reports, March 12, 1971, p. 1610; Standard and Poor's Corporation Records, 5364.

⁸ The exact figure is \$79,120,743 and for the same period ending June 30, 1970, its consolidated earnings were reported at \$67,193,233 which reflects an increase of approximately \$12 million. Moody's Public Utility News Reports, August 24, 1971, p. 1935; Standard and Poor's Corporation Records, p. 4757.

TENNESSEE GAS TRANSMISSION CO.,
Houston, Tex., April 30, 1971.

Mr. JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety, Department of Transportation,
Washington, D.C.

DEAR MR. CALDWELL: Attached is a copy of a letter dated April 1, 1971, to me from Mr. T. K. Spalding, Director, Gas Pipeline Safety Division, of the Public Service Commission of the State of West Virginia. Also enclosed is a copy of a letter to me dated April 22, 1971, from Mr. Augustine A. Mazzei, Jr., Assistant Chief Counsel, of the Public Service Commission of the State of West Virginia.

Mr. Mazzei's letter attributes a change of position to the Office of Pipeline Safety with respect to States assessing fees for pipeline safety regulation of interstate pipeline facilities. I am not aware of any change in the position of your office, since your distribution of the Guideline letter of October 30, 1970. Would you please advise as to whether there has been any change in the parameters and instructions of the Guideline letter.

Very truly yours,
Enclosures.

JERRY P. FORTENBERRY.

WEST VIRGINIA PUBLIC SERVICE COMMISSION,
Charleston, April 1, 1971.

TENNESSEE GAS PIPELINE CO.,
Tennessee Building, Houston, Tex.

(Attention: Mr. Jerry P. Fortenberry, Associate General Attorney).

DEAR SIR: Enclosed are the forms for reporting data on your pipelines, which data will be used to determine the special license fee to be assessed for the fiscal year beginning July 1, 1971.

In a guideline letter of October 30, 1970, relating to interstate gas transmission facilities, Mr. Joseph C. Caldwell, Acting Director, Office of Pipeline Safety, stated in part, "a state agency will not have authority to assess such fees for their safety services as our agent." The National Association of Regulatory Utility Commissioners, in a statement of March 9, 1971, before the U.S. House of Representatives, Subcommittee on Communications and Power, urged a reversal of that decision.

In view of the controversy, the Commission has therefore determined that rather than exclude interstate pipelines from assessment, which would in effect increase the assessment on intrastate pipelines, it would ask the operators to voluntarily pay the fee on interstate pipelines.

A favorable response would substantiate the preference of many of the large operators, expressed prior to the passage of Chapter 24B, that the state retain authority for administering the federal safety standards.

Unless the operators elect to support the Commission's request, it will be necessary to confine our activities to intrastate pipelines and surrender our agent's agreement for the surveillance of interstate pipelines to the Department of Transportation.

Very truly yours,

T. K. SPALDING,
Director, Gas Pipeline Safety Division.

WEST VIRGINIA PUBLIC SERVICE COMMISSION,
Charleston, April 22, 1971.

TENNESSEE GAS PIPELINE CO.,
Tennessee Building,
Houston, Tex.

(Attention: Mr. Jerry O. Fortenberry, Associate General Attorney).

DEAR SIR: By letter dated April 1, 1971, T. K. Spalding, Director of the Gas Pipeline Safety Division of the West Virginia Public Service Commission, advised you that assessments on interstate facilities were not authorized and requested that assessments on the interstate facilities be paid on a voluntary basis.

This Commission has never accepted the above as a proper interpretation of Chapter 24-B of the West Virginia Code and subsequent to the April 1 letter, the Office of Pipeline Safety, through its Acting Director, Joseph C. Caldwell, rescinded its edict against states assessing interstate facilities.

Therefore, be advised that unless Chapter 24-B is amended or our interpretation of said Chapter is altered through court decision, we will assess all pipeline facilities operating within the State of West Virginia regardless of their designation as inter- or intrastate pipeline.

We hope that these conflicting letters have not caused any undue confusion and that we will receive full cooperation from all the pipeline companies operating within this State.

Very truly yours,

AUGUSTINE A. MAZZEI, Jr.,
Assistant Chief Counsel.

TENNESSEE GAS TRANSMISSION CO.,
Houston, Tex., April 30, 1971.

MR. AUGUSTINE A. MAZZEI, Jr.,
Assistant Chief Counsel,
Public Service Commission,
Charleston, W. Va.

DEAR SIR: Your letter of April 22, 1971 to me referring to the letter dated April 1, 1971 of Mr. T. N. Spalding, Director of the Gas Pipeline Safety Division of the West Virginia Public Service Commission to me attributed a change of policy to the Office of Pipeline Safety. I am not aware of Mr. Joseph C. Caldwell, Acting Director of the Office of Pipeline Safety, changing the position of that office with respect to States assessing fees to interstate facilities.

This is a matter in which the position of the Office of Pipeline Safety should be unmistakable. Therefore, I am sending a copy of your letter and Mr. Spalding's letter to the Office of Pipeline Safety requesting a statement of their position.

Very truly yours,

JERRY P. FORTENBERRY.

WEST VIRGINIA PUBLIC SERVICE COMMISSION,
Charleston, June 21, 1972.

TENNESSEE GAS PIPELINE CO.
Tennessee Building,
Houston, Tex.

GENTLEMEN: Pursuant to Chapter 24B, Article 5, Section 3 of the Code of West Virginia, 1931, as amended, there is hereby assessed against your company a special license fee for support of the Gas Pipeline Safety Division of the Public Service Commission.

Information upon which this assessment is based was obtained from reports filed with the Public Service Commission by the respective companies. The total amount assessed for the 1971-72 fiscal year is \$90,000, with the per mile rate established at \$1.5176.

Amount of your assessment..... \$2321.93

This assessment is due and payable in one installation, *without discount*, on or before July 1, 1971.

Please make your check payable to the Public Service Commission of West Virginia, and mail same to: Gas Pipeline Safety Division, Room E-217, Capitol Building, Charleston, West Virginia 25305, *together with this form*, to assure proper credit.

Very truly yours,

ELIZABETH V. HALLANAN, *Chairman*.

WEST VIRGINIA PUBLIC SERVICE COMMISSION,
Charleston, August 3, 1971.

Re GPS case No. 40, Tennessee Gas Pipeline Co.
TENNESSEE GAS PIPELINE CO.,
Tennessee Building,
Houston, Tex.

GENTLEMEN: We are enclosing two copies of an order entered by the Commission on the 29th day of July, 1971, in the above captioned case.

Very truly yours,

S. GROVER SMITH, Jr., *Secretary*.

Enclosure.

PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, CHARLESTON

Entered by the Public Service Commission of West Virginia, at the Capitol in the City of Charleston on the 29th day of July, 1971.

GPS CASE No. 40

TENNESSEE GAS PIPELINE CO.—INVESTIGATION OF FAILURE TO PAY SPECIAL LICENSE FEE

Proceeding upon motion of the Commission.

Whereas, Chapter 24B of the West Virginia Code, 1931, as amended requires that any person engaged in the transportation of gas by pipeline shall pay a special license fee according to the number of three-inch equivalent pipeline miles included in their pipeline facility; and

Whereas, the records of the Gas Pipeline Safety Division of this Commission show that Tennessee Gas Pipeline Co. has failed to pay its special license fee for the fiscal year 1971-72 as required by Chapter 24B of the West Virginia Code; and

Whereas, the Commission is of opinion that there should be an investigation to determine why Tennessee Gas Pipeline Co. has failed to comply with the laws of the State of West Virginia.

It is, therefore, ordered that Tennessee Gas Pipeline Co. be made respondent to this proceeding and that this matter be set for hearing to be held in the Commission's Hearing Room at the Capitol in the City of Charleston on the 1st day of October, 1971, at 10:00 a.m., EDST, at which time and place the respondent shall appear and show cause, if any it can, why it should not comply with the laws of the State of West Virginia relating to the payment of its special license fee.

It is further ordered that the Secretary of the Commission give notice of this proceeding to respondent by mailing to it a copy of this order by United States Certified Mail, return receipt requested.

A Copy.

Teste:

Secretary.

TENNESSEE GAS TRANSMISSION CO.,
Houston, Tex., August 9, 1971.

Mr. JOSEPH C. CALDWELL,
Office of Pipeline Safety,
Department of Transportation,
Washington, D.C.

DEAR JOE: Tennessee Gas Pipeline Company has been served by mail with a show cause order by the Public Service Commission of the State of West Virginia. Attached is a copy of the show cause order and the covering certified mail letter. I am informed that Texas Eastern was similarly served.

You will recall that we discussed this matter by telephone on May 25, 1971, and by letter of May 26, 1971, I furnished you copies of several background letters. My memory is that you intended to follow up on the matter at that time, but to my knowledge you have not corresponded with PSC. In particular, there has been no response to my letter to you of April 30, 1971, a copy of which is attached, and this may have led the Commission into the show cause order.

Also attached is a copy of the Commission's assessment letter dated June 21, 1971, to which Tennessee did not reply. Our position had been made abundantly clear in earlier correspondence, and I believe you have copies.

The United States Court of Appeals, Fourth Circuit, in a case decided February 16, 1971, styled Public Service Commission of West Virginia v. The Federal Power Commission, upheld the preemption under the Natural Gas Act against PSC contentions. A copy of this decision (437 F.2d 1234) is attached. For this reason I believe PSC is relying on its belief that "... the Office of Pipeline Safety through its Acting Director, Joseph C. Caldwell, rescinded its edict against states assessing interstate facilities" as stated in the PSC letter

to me of April 22, 1971, thereby allowing PSC to make this assessment acting as an Agent of the Department of Transportation.

Your comments in this regard would be very much appreciated.

Very truly yours,

JERRY P. FORTENBERRY.

SEPTEMBER 1, 1971.

Re GPS case No. 40, dated July 29, 1971.

MISS ELIZABETH V. HALLANAN,

Chairman, West Virginia Public Service Commission, Charleston, W. Va.

DEAR MISS HALLANAN: The Tennessee Gas Pipeline Company has referred to us for comment an order and related documents of your Commission, setting for hearing on October 1, 1971, the alleged failure of that Company to pay a special fiscal year 1971-72 license fee of \$2,321.93 "for support of the Gas Pipeline Safety Division of the Public Service Commission."

The Tennessee Gas Pipeline Company owns and operates interstate gas transmission facilities in a number of States, including West Virginia. It is our understanding that the Company neither owns nor operates any intrastate gas facilities in West Virginia.

As you know, the OPS guidelines for States serving as agents of the Department of Transportation for interstate transmission facilities, dated October 30, 1970, copy enclosed, point out on pages four and five that the Natural Gas Pipeline Safety Act of 1968 does not authorize the Department of Transportation to assess interstate transmission operators inspection or surveillance fees. Therefore, any State agency, in acting as an agent of the Department, does not have authority to assess such fees for their safety services as our agent. On page five of these guidelines it is stated that: "Any additional requirements other than those set forth in the minimum standards imposed by a State agency on interstate operators must be under the authority of State law for some purpose other than those covered by the Natural Gas Pipeline Safety Act. (Underscoring added.)"

This Office has issued two clarifications of that policy statement. The first is my letter of December 18, 1970, to Mr. Richard A. Solomon, copy enclosed, regarding the filing of construction and design plans. The second is my letter of March 15, 1971, to Chairman George I. Bloom of the Pennsylvania Public Utility Commission. In that letter I again stated that the Secretary of Transportation has no authority, either express or implied, to impose or authorize fees or assessments on interstate pipeline operators. The letter continued: "Following the principle of law that an agent can have no more authority than his principal, it is equally clear that he cannot delegate to State agencies any authority for assessments *when acting under the Natural Gas Pipeline Safety Act as agents of the Secretary with respect to interstate transmission facilities.*"

"This does not, of course, affect the rights of a State or State agency to impose fees on the interstate operators under any other authority that it might possess. The Secretary cannot restrict the authority of a State agency when it is acting in any other capacity or under any other legal authority. To the extent that our letter of October 30, 1970, may have implied that a State could not, in some capacity other than as our agent, assess fees for their services, it is not controlling and is modified in accordance with the preceding statement."

In view of the foregoing and the fact that we have been informed that other interstate operators face the same situation, we would greatly appreciate hearing from you about the precise purpose for which the special license fee is being assessed against interstate gas transmission operators. If the fee is intended to contribute toward financing the safety functions being performed by your Gas Pipeline Safety Division as an agent of the Department to aid in safety enforcement of interstate transmission facilities, it appears that there is no legal basis for the assessment. Similarly, if the fee is intended for safety purposes of the Commission in its own right, there can be no legal basis for it because the Natural Gas Pipeline Safety Act of 1963 preempted safety jurisdiction over all interstate gas facilities and vested that jurisdiction in the Department of Transportation. On the other hand, if the fee is authorized by State law for the purpose of financing any legitimate function of your Commission, other than safety, which has been assigned to your Gas Pipeline Safety Division, it would be helpful to all interested parties if your Commission would identify such function.

Your reply will help to clarify any misunderstanding which may exist on this subject.

Sincerely,

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

WEST VIRGINIA PUBLIC SERVICE COMMISSION,
Charleston, September 13, 1971.

Hon. JOSEPH C. CALDWELL,
Acting Secretary, Office of Pipeline Safety,
Office of the Secretary of Transportation, Washington, D.C.

DEAR MR. CALDWELL: This is to acknowledge receipt of your letter of September 1, 1971, concerning this Commission's proceeding against Tennessee Gas Pipeline Company for failure to pay its 1971-72 license fee.

The authority under which be billed Tenneco is found in Chapter 24B, Article 5, Section 3 of the Code of West Virginia, 1931, as amended, which states as follows:

"(a) Every pipeline company shall pay a special license fee in addition to those now required by law. The amount of such fees shall be fixed by the public service commission and levied by it upon each of such pipeline companies according to the number of three inch equivalent pipeline miles included in its pipeline facilities, and shall be apportioned among such pipeline companies upon the basis of the pipeline companies' reports submitted to the commission in such form as the commission may prescribe, so as to produce a revenue of not more than ninety thousand dollars per annum, which fees shall be paid on or before the first day of July in each year."

As you will note from the above section the total money collected through this formula is \$90,000.00, and approximately \$60,000.00 is collected from interstate facilities. To exclude interstate facilities from our assessment formula would result in exorbitant fees being charged the small companies and the independent producers. The amount of federal funds available to this Commission would in no way offset this loss of revenues.

This poses a rather difficult problem for this Commission, because, on the one hand we are requested to regulate interstate facilities and, on the other, we are advised that we cannot collect money from these companies unless it is in the "guise" of a tax. Should DOT and the interstate companies insist upon forcing this prohibition, this Commission may have to reconsider its decision to participate in the federal gas pipeline safety program.

Very truly yours,

ELIZABETH V. HALLANAN, *Chairman.*

SEPTEMBER 28, 1971.

Miss ELIZABETH V. HALLANAN,
Chairman, West Virginia Public Service Commission,
Capitol Building, Charleston, W. Va.

DEAR MISS HALLANAN: I appreciate your letter of September 13, 1971, concerning the provisions of the Code of West Virginia relating to the assessment of license fees against interstate pipelines.

This letter affirms the views we stated in earlier correspondence, namely, that the Natural Gas Pipeline Safety Act of 1968 does not authorize the Department of Transportation to assess fees against any gas operator subject to that Act. Therefore, the Department cannot delegate, to any State that serves as an agent of the Secretary to aid in enforcing safety standards applicable to interstate gas facilities, any authority to assess fees for performing that function.

If we can be of further assistance to you, please let me know.

Sincerely,

JOSEPH C. CALDWELL,
Acting Director, Office of Pipeline Safety.

FOURTH ANNUAL REPORT
OF THE
SECRETARY OF TRANSPORTATION
ON THE ADMINISTRATION OF THE
NATURAL GAS PIPELINE SAFETY ACT OF 1968



CALENDAR YEAR 1971

(87)

TO THE CONGRESS OF THE UNITED STATES:

I herewith transmit the Fourth Annual Report on the administration of the Natural Gas Pipeline Safety Act of 1968. This report has been prepared in accordance with Section 14 of the Act, and covers the period of January 1, 1971, through December 31, 1971.

Richard L. Lyng

THE WHITE HOUSE,

April, 1972

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(Pertinent section of Act follows subtitle)

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INTRODUCTION

This report covers the administration of the Natural Gas Pipeline Safety Act of 1968 for the calendar year 1971. The report is divided into sections, which generally correspond to the requirements of Section 14 of the Act.

The Department's gas pipeline safety responsibilities involve a network of more than a million miles of gas transmission pipelines, distribution systems, and non-rural area gathering lines. Those systems under the Department's safety jurisdiction are constructed, operated, and maintained by more than 2,000 separate operators who supply 40 percent of the nation's energy needs while serving some 41 million customers. Age of the systems range from those recently installed to others which have been in the ground for over 150 years, thus involving a variety of engineering and operating challenges in carrying forward the Department's pipeline safety programs.

The Act provides for Federal safety standards for gas pipeline facilities utilized in the transportation of natural, flammable, toxic, or corrosive gases. The Act creates exclusive Federal safety authority over systems, generally described as interstate systems, which are subject to the jurisdiction of the Federal Power Commission under the Natural Gas Act. A State agency may assume responsibility, by certification, for administering and enforcing safety programs with respect to intrastate facilities and may adopt additional, or more stringent, standards which are not incompatible with Federal standards. A State agency that does not submit a certification may enter into an agreement with the Secretary to aid in the enforcement of Federal safety standards.

During 1971, the Office of Pipeline Safety (OPS) which administers the Act under delegation from the Secretary of Transportation, through the Assistant Secretary for Safety and Consumer Affairs, took several significant steps to improve the effectiveness of the Federal pipeline safety program. Especially important among these have been programs to provide additional Federal safety

standards for corrosion control, strengthening the role of State agencies through Federal grants, and development of compliance and technical information programs to assure that all gas pipeline operators achieve a maximum level of safety.

OPS review of industry operational experience, scientific research, published technical information and communication with government agencies, industry and the public, determined that corrosion is a major problem. The leak and failure data reported by operators to date show that about one-half of all leaks on gas pipeline facilities are caused by corrosion. It is recognized by government, industry, and the public generally that effective corrosion control is a vital part of the safe and efficient operation of any gas pipeline system. The Federal standards issued in 1970 did not adequately cover corrosion control. Because of the complex nature of the corrosion problem and the many variables associated with the technology of corrosion control, OPS made great efforts to obtain as much factual information as possible from all sources. This was carried out through the rulemaking process, including notices, public hearings, and review and comment by the Department's Technical Pipeline Safety Standards Committee. These corrosion control regulations for gas pipelines (Appendix 4) went into effect on August 1, 1971.

The Department has overall responsibility for safety regulation of intrastate facilities, as well as exclusive authority over interstate systems. The OPS works closely with the States in all aspects of the pipeline safety program, and it has continued to encourage strong effective State pipeline safety programs. Cooperative action, particularly concerning intrastate facilities, is a very important element in the total pipeline safety program. Since 1968, State legislatures have displayed great interest in the program by enacting pipeline safety legislation to facilitate joint action with the Department. In 1971, 50 (including the District of Columbia and Puerto Rico) of 52 eligible jurisdictions cooperated with the Department under Section 5 of the Act.

The Federal financial assistance program for gas pipeline safety began in 1971, with an appropriation of \$500,000. Thirty-five States thereafter requested and

received allocations totaling \$500,000 for reimbursement of up to 50 percent of their cash expenditures made on their gas pipeline safety programs in 1971. Later in 1971, Congress appropriated an additional sum of \$750,000 for the States' calendar year 1972 gas pipeline safety programs. Forty-one States requested and received allocations totaling this amount. The allocations will be applied toward reimbursement of each State's cash expenditures made in 1972 on its gas pipeline safety program.

Compliance activity and safety information dissemination were emphasized in 1971 to assure that the Federal safety standards obtained results. Additional safety standards will be issued to solve specific problems identified in the future, but the framework of the Federal pipeline safety standards is basically complete. With these safety standards as a foundation and utilizing the operators' inspection and maintenance plans submitted, the compliance program was initiated in 1971. OPS has added compliance personnel to the staff. Also, the Houston field office carried out 43 compliance actions during the year.

To assist operators in understanding the detailed requirements of the Federal safety standards and provide them useful technical and regulatory pipeline safety information the OPS initiated publication of a monthly Advisory Bulletin in September 1971. It is distributed to more than 4,000 addressees involved in pipeline safety activity. These include State agencies, industry, engineering/contractors, professional groups, the press, and the general public.

ORGANIZATIONAL DEVELOPMENTS

The Office of the Assistant Secretary of Transportation for Safety and Consumer Affairs directs the Department's operational and regulatory pipeline safety programs. The Office of Pipeline Safety has been organized along the lines of the specific functions required by the Act and includes divisions for technical, state, industry, and regulatory functions. During 1971, a compliance officer

was assigned to the Director's staff to further strengthen this activity. The FY 72 staffing of the Office of Pipeline Safety provides for a total of 20 professional and 7 clerical personnel.

Many of the details of administering and coordinating the programs of the Office of Pipeline Safety in the States of Texas, Louisiana, Arkansas, Oklahoma, and New Mexico have been carried forward by a pilot field office located in Houston, Texas. This pilot office has three staff positions at present. This facility has been utilized in monitoring the gas pipeline safety regulatory functions of all gas pipeline operators in Louisiana, since the State of Louisiana is not participating in the Department's pipeline safety program.

The dispersed nature of the pipeline industry indicates an important role for OPS field offices in carrying out the Federal/State safety programs. The Houston office is being utilized also to establish and evaluate procedures and compliance techniques for operating other field offices when they are established.

ACCIDENTS AND CASUALTIES

The compilation in Appendix 1 is based upon leak and failure reports received in the Office of Pipeline Safety for calendar year 1971. Totals represent the first full year summary prepared by the Department for gas pipeline systems. The reports upon which they were based are required under 49 CFR Part 191, Sections 191.9, 191.13 and 191.15 (Appendix 7) which became effective February 9, 1970. During 1971, there were 45 deaths, 391 injuries, and an estimated \$2,632,170 in property damage resulting from the 1,287 individual gas pipeline failures reported to the Department.

During 1971, OPS staff engineers investigated or assisted State agency investigations of six distribution system failures in Miami Beach, Florida (January 4), Baltimore, Maryland (January 8), West Orange, New Jersey (January 10), Point Pleasant, New Jersey (January 14), West Conshohocken,

Pennsylvania (January 27), and Lambertville, New Jersey (February 3). These were particular failures resulting in the loss of life, serious injuries, or which involved unusual technical aspects.

In the Miami Beach incident, there was one death and there were 33 injuries as the result of a gas explosion and fire in attached buildings. The cause of the accident was the opening of gas service meter shutoff valves by unauthorized person(s). To prevent such future occurrences, OPS has proposed new regulations for safety procedures for disconnected service lines and is presently evaluating public comments before issuance of additional safety standards.

In Baltimore, an explosion and fire resulted in four deaths, two injuries, three homes destroyed and two others damaged. No direct cause was determined from the investigation; however, a 4-inch main was found to be broken near one of the houses which had been destroyed.

In the West Orange incident, one person was hospitalized and a house was damaged as a result of an explosion and fire. Investigation revealed that a 6-inch cast iron low-pressure gas main had broken. Examination by the National Bureau of Standards for the Office of Pipeline Safety led to the conclusion that the pipe fractured because of an external load placed upon it which it could not withstand, and that deep corrosion pitting, not apparent to normal visual examination, was a contributing factor.

At Point Pleasant, explosions occurred in several houses and two houses were damaged by fires when a natural gas regulator malfunction caused high-pressure gas to enter into a low-pressure distribution system. Houses on several streets were affected. Investigation disclosed some pressure control equipment inadequacies, and the gas distribution firm has taken steps to bring operations in complete compliance with the Federal safety standards.

In the West Conshohocken incident, there were four fatalities and 52 injuries, including several firemen, as a result of gas explosions and fires. Fifteen houses were totally destroyed and 25 were damaged to varying degrees. The cause of this catastrophe was determined to be the result of a combination of a poor oxy-acetylene

girth weld and heavy impact loading on the pipe resulting from trucks going over a bump in the road near the location of the girth weld. The Pennsylvania Public Utility Commission ordered the operator of the gas distribution system to abandon the use of the steel main having the questionable oxy-acetylene girth welds, and ordered all gas utilities under its jurisdiction to make a survey of their systems' oxy-acetylene girth welds and report to the Commission on their findings.

At Lambertville there were 8 deaths and 12 injuries as a result of gas explosions and fires. Two duplexes were destroyed. The Hunterdon County Prosecutor conducted a special grand jury hearing to investigate the incident and handed down a presentment on May 27, 1971. The New Jersey Board of Public Utility Commissioners conducted a series of public hearings in their investigation of the incident and will issue a report of their findings. The source of the gas that caused the explosions and fires was determined to be a broken 4-inch cast iron valve near one of the houses.

The National Transportation Safety Board (NTSB) completed in 1971 its investigation of a 1969 natural gas pipeline accident. A synopsis of the investigation of the rupture of a Mobil Oil Corporation high pressure natural gas pipeline near Houston, Texas, on September 9, 1969, and a statement of probable cause appears in Appendix 2.

The Office of Pipeline Safety, the Railroad Commission of Texas, the Texas Department of Public Safety, and the operator of the pipeline cooperated with the NTSB in the investigation. The cause of the rupture was apparent very early in the investigation; however, consideration of means to prevent similar ruptures in the future extended the investigation.

In the NTSB recommendation, two matters were cited for Office of Pipeline Safety action. In the first matter, the Office of Pipeline Safety plans to make a thorough study of the matter of protecting existing transmission lines against accidental overpressuring and to provisions for rapid shutdown. If the results warrant, OPS will initiate rulemaking action to assure protection against overpressuring of gas pipelines. In the second matter

cited, the Federal safety standards (Appendix 3), which became effective subsequent to the rupture, have clarified to some extent the determination of maximum allowable operating pressure for existing pipelines. Consideration is being given to rulemaking action to further clarify the proper joint factor to be used in maximum allowable operating pressure determinations for existing pipelines.

FEDERAL GAS PIPELINE SAFETY STANDARDS

Until March 12, 1971, the interim Federal safety standards required by section 3(a) of the Act were in effect with respect to design, installation, and testing of new gas pipelines. On that date, the new Federal safety standards (Appendix 3) which were effective throughout the year for the operation, maintenance, and inspection of existing pipelines became effective also for the design, installation, and testing of new gas pipelines.

Three amendments to the Federal safety standards were issued during 1971. To complement the standards issued in August 1970, which did not include regulations on corrosion control, the Department established regulations on corrosion control in Subpart I (Appendix 4) on June 25, 1971. These comprehensive new standards, which contain requirements for control of corrosion on pipelines from external, internal or atmospheric environmental causes, became effective August 1, 1971. An amendment issued September 28, 1971, extended the time for completing confirmation or revision of the maximum allowable operating pressure for pipelines operating at more than 40 percent of specified minimum yield strength (Appendix 5). Certain safeguards were provided in requirements for comprehensive plans for completion of the work. Another amendment (Appendix 6), applicable to six States, continued until September 1, 1972, the requirements contained in the interim Federal standards for odorization of gas in transmission lines.

Regulations requiring the reporting of leaks and failures which occur on gas pipelines (Appendix 7) were in effect throughout 1971. An amendment (Appendix 8) notifying gas pipeline operators of a change in the telephone number for reporting of leaks became effective April 20, 1971.

In addition, the Department issued 3 notices of proposed rulemaking which were still under active consideration at year-end and held two public hearings on such notices during 1971.

WAIVERS GRANTED UNDER SECTION 3(e) OF THE ACT

In accordance with Section 3(e) of the Act the Department held three public hearings, in response to petitions, and granted the following waivers:

On February 5, 1971, the Department granted an extension of a waiver to the Northern Natural Gas Company of Omaha, Nebraska. The waiver permits the company to operate a 276-mile segment of its 24-inch "B" pipeline between Mullinville, Kansas, and Palmyra, Nebraska, at a maximum operating pressure of 797 psig until July 1, 1972, in lieu of its established operating pressure of 700 psig. The waiver was granted because there had been no apparent changes in the circumstances justifying the original waiver, granted June 18, 1970, and an extension of the waiver would not derogate gas pipeline safety.

The Department granted a waiver on April 26, 1971, to the Transcontinental Gas Pipe Line Corporation of Houston, Texas. The waiver permits the company to utilize, in an operating gas transmission line, pipe which had not been transported according to the requirements of Section 192.65, 49 CFR. The waiver was granted, subject to certain conditions, because a loading procedure was to be used which appears to limit the stresses due to rail transportation so as not to exceed those permitted under the regulation; and large quantities of pipe loaded according to such procedure have been transported in the United States and Canada without resulting in any known unsafe pipe conditions. In effect, the waiver permits the shipment of extra long joints of pipe using the latest technology to achieve economies and at the same time to assure pipeline safety by means of proper inspection and testing after shipment.

On November 12, 1971, the Department granted a waiver to the United Gas Pipeline Company of Shreveport, Louisiana, from the requirements of Section 192.55 of the Federal safety standards for gas pipelines. Section 192.55

establishes the qualifications for steel pipe used in gas pipeline facilities. The waiver was granted because the information and data supplied with the petition and presented in testimony at the public hearing showed that the pipe in question substantially meets the requirements of API 5LX 1967 edition for pipe of this size and grade. The OPS determined that this assured a level of safety equivalent to that of the specification listed in the Federal safety standards, that storage of the pipe was in accordance with acceptable practices to preserve the integrity of the pipe, and that use of the pipe would not derogate pipeline safety.

During 1971, the following waivers were granted by State regulatory commissions. The Office of Pipeline Safety has interposed no objection to these waivers:

1. A waiver was granted to Southern California Gas Company and to Pacific Lighting Service Company on March 23, 1971, by the California Public Service Commission.

This waiver sought extensions of time to comply with the following:

(a) For Southern California Gas Company through December 1971, to comply with Section 192.621(b).

(b) For Southern California Gas Company and for Pacific Lighting Service Company through March 1971, to comply with Section 192.619(a)(3).

(c) For Southern California Gas Company through December 1971, to comply with Section 192.743(c).

(d) For Southern California Gas Company through March 1971, to comply with Section 192.195(a).

The waiver was granted since the extension would not change or alter any standard. Operators intended to comply with these regulations as rapidly as possible but at a rate that would not sacrifice the adequate performance of equally important operation and maintenance activities. Regular progress reports were required to be filed with the Commission.

2. A waiver was granted to Pacific Gas and Electric Company on April 13, 1971, by the California Public Service Commission. This waiver was seeking the following extensions of time:

(a) Through December 1971, to comply with Section 192.621(b).

(b) Through July 1971, to comply with Section 192.619(a)(3).

(c) Through December 1971, to comply with Section 192.743(c).

(d) Through December 1972, to comply with Section 192.195(a).

The waiver was granted since the extension would not change or alter any standard. The operator intended to comply with these regulations as rapidly as possible but at a rate that would not sacrifice the adequate performance of equally important operation and maintenance activities. Regular progress reports were required to be filed with the Commission.

3. A waiver was granted to the Decatur Gas Department on August 9, 1971, by the Alabama Public Service Commission. This was a waiver to Section 192.625 for a 6-inch and 8-inch line transporting gas from the town border station to the Monsanto Chemical Company. The waiver permits Monsanto Chemical Company to obtain a non-odorized gas supply, because the plant must have non-odorized gas for its chemical process. Monsanto installed odorizers for some sections of the plant, and only one line will remain non-odorized. The Commission determined that the waiver permitting a portion of the plant to be served with non-odorized gas would not derogate public safety.

4. A waiver was granted to the Frederick Gas Company in November 1971, by the Maryland Public Service Commission. This waiver pertained to Section 192.177(a)(3) which stipulates that a gas bottle-type holder be buried. A waiver was granted from this regulation so that the holder could be installed temporarily above ground until January 1972. A condition to this waiver was that there be adequate separation of the installation from places of human habitation.

EVALUATION OF DEGREE OF OBSERVANCE OF APPLICABLE
SAFETY STANDARDS--COMPLIANCE ACTIVITIES

The gas pipeline safety compliance program involves three major areas of activity: OPS monitoring of State agency performance; OPS compliance activities relating to interstate gas transmission operators and intrastate gas operators not under State agency safety jurisdiction; and State agency efforts to secure compliance by intrastate gas operators covered by certifications or agreements under Section 5 of the Act. In 1971, a compliance officer was added to the staff to direct the OPS activities, with particular attention to developing a formal compliance program and coordinating actions carried out with the Houston field office staff.

At the beginning of the year, OPS initiated compliance actions in two major areas, with respect to State agencies. First, it reviewed certifications submitted by State agencies for adequacy of information required under Section 5(a) of the Act. Secondly, it established target dates for State agency performance during the year. These target dates also served as an effective means toward achieving substantially uniform progress in safety program development among the States on a nationwide basis. Periodic reports received from the States on their progress in relation to the target dates served as a basis for measuring State agency capability and performance.

In addition, through on-site visits OPS monitored the safety programs of five State agencies. Four of these were conducted by the OPS field office in Houston, Texas, which also evaluated the safety activities of seven interstate gas transmission operators, and of 32 intrastate gas operators in Louisiana which are under direct OPS safety jurisdiction.

Although some of the States do not yet have adequate funds and staff capability to advance the compliance program on a mutually uniform and consistent basis, summarized below are a number of enforcement actions taken during 1971:

1. Enforcement actions were initiated by the Florida Public Service Commission against 33 gas systems for violations of various provisions of the minimum safety standards in effect in Florida. Corrective actions were in turn taken by the systems, so that no assessments or penalties had to be invoked by the Commission to obtain corrective measures.

2. The Michigan Public Service Commission took seven compliance actions against operators for violations of various requirements in the Federal or State pipeline safety standards. The Commission assessed penalties against two of these operators for such violations.

3. The Missouri Public Service Commission, by informal enforcement actions, assessed penalties against two gas utilities. A fine of \$300 was voluntarily paid by the Missouri Public Service Company (Kansas City, Missouri) because of the Company's alleged failure to notify the Commission "as soon as reasonably possible" of a gas explosion and fire October 16, 1971, in Chillicothe, Missouri. The Company notified the Commission on October 18, 1971. A fine of \$200 was voluntarily paid by the Missouri Utilities Company (Cape Girardeau, Missouri) because of the Company's alleged failure (1) to operate or periodically inspect during the preceding year each transmission line valve that may be required during any emergency; and (2) to maintain and operate the Company's facilities in conformity with its inspection and maintenance plan.

4. The Nebraska Office of Fire Marshal issued a series of orders taking compliance actions against a number of gas operators in the State. Upon inspection of the gas facilities and records of such operators, the Office of Fire Marshal found that certain features did not comply with the applicable regulations.

5. The New York Public Service Commission took the following enforcement actions:

(a) Iroquois Gas Corporation was ordered, on January 29, 1971, to immediately survey all of its reported leaks (some 2,700 in number) and to repair immediately all leaks classified as other than non-hazardous.

(b) Consolidated Edison Company of New York, Inc., was ordered, on April 6, 1971, to adopt appropriate safety procedures with regard to connection of gas service laterals for new customers. This directive specifically required tamper-proof valves in all cases where the new service lateral is installed before the customer service begins.

6. The Pennsylvania Public Utility Commission issued the following orders:

(a) On February 19, 1971, against the UGI Corporation. As a result of an accident in Womelsdorf, Pennsylvania, the Commission ordered the Company to immediately engage the services of a qualified engineer or engineering firm to conduct a detailed study of the condition and service ability of the Company's facilities in Womelsdorf and to submit to the Commission a copy of the report of such engineer or engineering firm.

(b) On October 18, 1971, against the Philadelphia Electric Company. As a result of the investigation of an accident in West Conshohocken, Pennsylvania, the Commission ordered the Company to permanently abandon a section of the pipeline (approximately 3,000 feet in length) that had been involved in the accident; and

(c) In a concurrent order, on October 18, 1971, the Commission ordered that all gas utilities under the Commission's jurisdiction: review the particulars of all past recorded oxy-acetylene weld joint failures to determine similarities in failure mechanism, location, age or environment; survey and/or patrol oxy-acetylene welded mains in each distribution system to determine locations which possess factors similar to those discovered in the above review; determine the condition of welded joints at the locations found in the survey or patrol to establish which joints are possibly inadequate to withstand the combined stresses at that location and take appropriate corrective measures; and submit a report

of findings to the Commission. It further ordered the Philadelphia Electric Company to conduct the following research and investigation program for prevention of failures in welded joints on its oxy-acetylene welded steel pipelines: examine previous recorded failures to determine similarities in failure mechanism, age or environment; survey pipeline system to determine locations which may possess factors similar to those found in the examination of records; using strain-gauge techniques, measure static and dynamic stresses at points located in the above survey; using a non-destructive testing technique such as radiographic, determine the condition of welded joints at the points located in the survey mentioned; perform mechanical tests on samples from selected radiographed joints to correlate the results of non-destructive tests to the strength of the material; using information developed in the strain-gauge, non-destructive testing and mechanical tests, determine the combinations of stresses necessary for failure to occur in the piping; compare these failure stresses with those existing in its pipe system and determine a "performance factor" for the piping; and submit a report of findings to the Commission no later than November 1, 1972.

7. The Tennessee Public Service Commission, in conducting its inspections of intrastate gas operators under its safety jurisdiction, ascertained that a number of the operators failed to comply with the requirements of 49 CFR Section 192.227 relating to the qualifications of welders. Because the State lacked adequate provision for qualification of welders, the Public Service Commission arranged with Tennessee's Area Vocational Technical School System for the training and testing of qualified welders so that operators could fully comply with the safety standards.

Additionally, in order to assure compliance with reporting requirements of the Federal and State regulations, a number of States found it necessary to institute enforcement proceedings against certain gas pipeline operators in these States for failure to file an individual leak or annual report.

SUMMARY OF OUTSTANDING PROBLEMS

Significant problems that the Department faces in the administration of the gas pipeline safety program include these matters:

1. There is a continuing need for State agency safety jurisdiction over all intrastate gas facilities in each State. Additional progress toward this objective was accomplished through State legislation in 1971.

As of December 31, 1971, because of appropriate action in 39 States, the District of Columbia and Puerto Rico, 43 jurisdictions have adequate statutes on monetary sanctions. Only eight jurisdictions still need such legislation; and in a ninth, State enactment of legislation is under legal review.

Further, with more than 950 municipally-owned gas distribution systems in 35 States, in 1968 only ten States had statutes which vested safety jurisdiction over the municipal systems in a State agency. The Department had direct safety jurisdiction over more than 750 municipal gas distribution systems in 25 States. As a result of State legislative enactments since 1968, by year-end 1971 27 States have safety jurisdiction over some 675 municipal gas systems, and the Department's jurisdiction applies to about 275 such systems in only eight States.

2. Following enactment of the Natural Gas Pipeline Safety Act and the application of the Federal safety standards to LP gas systems that serve 10 or more customers, it became evident that in a number of States the State agency or official that has safety jurisdiction over LP gas does not have authority to assess civil penalties substantially the same as the related provisions of the Act; therefore, such State agency or official does not qualify for a certification under Section 5(a) of the Act. In 1972 the Department plans to review the jurisdictional and reporting requirements concerning LP gas systems and small natural gas systems.

ANALYSIS AND EVALUATION OF RESEARCH ACTIVITIES

Research and study projects sponsored during the year concluded work begun in earlier years and initiated new efforts to collect safety information of value in the Federal pipeline safety regulatory program. Data from such studies is being circulated to the public and to industry to advance the technology of pipeline safety. Funds totalling \$90,000 were obligated during calendar year 1971, and some studies were supported by funds obligated in 1970 which continued into the year.

1. The Department renewed a contract to more fully develop a data system to process the leak and test failure reports received by the Office of Pipeline Safety. The initial aspects of this system became operational in 1971, and it is being developed to provide guidance to Government user groups, industry, and the public, and to assess the effectiveness of Federal and State pipeline safety regulations. Information from the data system has been made available to State agencies, industry, professional groups, the press, and the general public. Continuing development and refinement of this program is being directed so it will be more accessible and useful to all these groups to further improve pipeline safety.
2. A program contracted by the Department to determine the current state-of-the-art concerning corrosion of steel and iron pipelines was concluded during the year. A report presenting the results of an extensive literature survey, direct questionnaire, and personal contacts with authorities in the field was published by the Office of Pipeline Safety and is being made available to those who supplied data, and to other interested parties who request it.
3. Office of Pipeline Safety staff members are participating with the Department of the Interior in evaluation of the technical aspects of the Trans-Alaska pipeline. The design of the pipeline is unique; and because of the importance of its safety and its potential impact on the

environment, the Department contracted to evaluate the adequacy of the stress design for that pipeline in an Arctic environment. Engineering work done under the contract will not only assure the Department of compliance with current pipeline safety regulations but will also aid in designing a pipeline system which will minimize adverse effects on the environment. Although the Trans-Alaska system is not a gas pipeline, much of this research will apply to future gas pipelines proposed to be built in the Arctic.

4. The Department contracted with the National Bureau of Standards (NBS), Metallurgy Division, to provide to the Office of Pipeline Safety services of inspection, testing and analysis of pipeline specimens and other pipeline component parts to assist in the determination of the probable cause of pipeline failures. Written reports being provided to the Department by NBS at the completion of each project include photographs, analysis of the failed specimens, and technical recommendations that NBS may suggest for the prevention of such failures in the future. NBS services under this contract were utilized by the Office of Pipeline Safety in nine investigations during the year.

5. Research at Battelle Memorial Institute, supported by private funds, has been directed toward establishing criteria for determining the strength of corroded areas of pipeline. Individual corrosion pits of limited area may not reduce the pressure carrying ability of a gas pipeline; however, large corrosion areas do reduce the remaining strength of the pipe. Mathematical analysis of the factors involved and subsequent experiments by Battelle on full-scale specimens of pipe have been carried out. Results of the Battelle study should be useful to the Department, when considered with other pertinent data, in developing more comprehensive regulations concerning the requirements for limiting the extent of corrosion areas which may be permitted on gas pipelines.

PENDING OR COMPLETED JUDICIAL ACTIONS

There were no judicial actions pending at the beginning of the year and none were begun during the year.

DISSEMINATION OF TECHNICAL AND CONSUMER-ORIENTED INFORMATION

During 1971, the Department's pipeline safety activities were not of a character that led to the development of consumer-oriented information of general interest for broad public distribution. Much of the information generated continues to be of special interest to engineers, technical operating personnel and managers in the industry, or in State agencies, who are directly involved in pipeline safety responsibilities. The Office of Pipeline Safety continues to distribute technical and regulatory information by direct mail to some 4,000 addressees including State agency officials and personnel, gas distributors (including more than 900 municipal systems), transmission and gathering line operators, engineers, contractors, technical and industry press, and the general public.

To provide as quickly as possible a regular source of information about current Department pipeline safety regulatory matters in concise form, the Office of Pipeline Safety initiated a monthly Advisory Bulletin. The Bulletin contains interpretations of general interest based upon inquiries to OPS about certain regulatory requirements in specific circumstances, and disseminates other information concerning regulations and related pipeline safety programs. Publication of the Bulletin met with high interest in the first six months of publication. About 300 responses to OPS requested that more than 700 persons from industry and the public be added to the mailing list to receive it.

The Department has continued an active program to inform the industry and the public about the pipeline safety regulations which have been issued. Office of Pipeline Safety staff members participated in 46 professional engineering, industry association, and other public group meetings during 1971. Programs discussing details of the regulations were presented by staff members at 30 of these meetings which were attended by an estimated 6,800 people from the public and industry. Copies of all gas pipeline safety regulations issued by the Department are mailed promptly to all State agencies and other interested persons on the Office of Pipeline Safety mailing

distribution lists. In addition to this direct program, technical articles about the Federal safety standards, or reprints of current standards, have been published by three industry journals and one equipment catalog used by the designers of gas pipeline systems.

CERTIFICATES AND AGREEMENTS UNDER SECTION 5 OF THE ACT

Section 5 of the Act provides for participation by the States in the pipeline safety program, either through the filing of a Section 5(a) certification by the State or the State's entering into a Section 5(b) agreement with the Department.

Appendix 9 shows that 50 jurisdictions, including Puerto Rico and the District of Columbia, submitted certifications or entered into agreements under Section 5 of the Act. Two jurisdictions, Louisiana and New Jersey, did not participate in the program in 1971.

While 49 jurisdictions were covered under Section 5(a) certifications during 1970, in 1971 this figure decreased because the exception in Section 5(a) permitting certification without regard to adequacy of State statutes relating to injunctive and monetary sanctions expired in August 1970. This required the States that did not have adequate injunctive and monetary sanctions to enter into Section 5(b) agreements in August 1971, when their Section 5(a) certifications expired. Consequently, State participation under Section 5(b) agreements increased.

Appendix 9 also lists the States which on December 31, 1971, were serving as agents of the Department regarding interstate transmission facilities located in those States. These agency relationships will continue until the Department has a field staff capable of undertaking enforcement of the regulations covering interstate systems.

The Department did not reject any Section 5(a) certifications or terminate any Section 5(b) agreements during the calendar year.

RECOMMENDATIONS FOR ADDITIONAL LEGISLATION

In testimony before the Committees of Congress and in subsequent correspondence, the Department recommended:

1. Amendment of the Natural Gas Pipeline Safety Act of 1968 as follows:

(a) To provide that the exception in Section 5(a) that permits certification for two years without regard to injunctive and monetary sanctions be extended to five years. This would provide certain States with time to amend their laws to be substantially the same as related provisions of the Act.

(b) To provide legislative authorization, by an amendment of the Act, for appropriations beyond FY 71.

2. Amendment of the Department of Transportation Act to permit the transfer of the liquid pipeline safety functions from the Federal Railroad Administration to the Office of the Secretary where the liquid and gas pipeline functions can be carried out by a single organizational unit.

TECHNICAL PIPELINE SAFETY STANDARDS COMMITTEE DEVELOPMENTS

The Act provides for a Technical Pipeline Safety Standards Committee, which includes members from government agencies, industry, and general public, to review and comment on the technical feasibility, reasonableness and practicability of all proposed Federal pipeline safety standards.

The Technical Pipeline Safety Standards Committee met on April 13 and 14, 1971. In accordance with Section 4 of the Act the Committee evaluated the corrosion control requirements of the Federal safety standards. Its report on the proposals, together with a dissenting comment and recommendation, are presented in Appendix 4.

COOPERATION WITH OTHER FEDERAL AGENCIES

Federal Power Commission

There have been frequent exchanges between the Department and the Federal Power Commission on technical aspects of the Federal safety standards and the various amendments to the regulations as they have been developed. The FPC furnishes one of the governmental members of the Technical Pipeline Safety Standards Committee.

Department of the Interior

The Department has continued to cooperate with the Department of the Interior on activities relating to the Trans-Alaska pipeline, the U.S. Energy Outlook Study of the National Petroleum Council, Emergency Petroleum and Gas Administration planning, and on environmental aspects of safety regulations for offshore pipeline facilities.

Department of State

The Office of Pipeline Safety participated in the 6th U.S.--Japan Conference on Natural Resources at the Department of State, presenting a discussion of the development of Federal pipeline safety regulations.

Environmental Protection Agency

The Department joined the Environmental Protection Agency and the National Aeronautics and Space Administration in the feasibility of a study of failure modes and effect analysis relating to the environmental aspects of oil and gas facilities.

Department of Labor

The Department has maintained close liaison with the Department of Labor on matters of common interest relating to Occupational Safety and Health Administration regulations as they interface with Federal pipeline safety standards.

APPENDICES

Appendix 1

LEAKS REPORTED DURING CY 1971 AS REQUIRED BY CFR 49, PART 191,
SECTIONS 191.9, 191.13 AND 191.15

Distribution	Total No. of Leaks	----Fatalities-----		-----Injuries-----		Estimated Property Damage
		Employees	Non Employees	Employees	Non Employees	
Total	877	6	36	37	330	\$297,474
Subtotal by cause:						
Corrosion	120	0	3	9	30	
Damage by Outside Forces . . .	575	0	13	8	138	
Construction Defect or						
Material Failure	121	0	16	4	111	
Other Causes	61	6	4	16	51	
Transmission						
Total	410	2	1	14	10	\$2,334,696
Subtotal by cause:						
Corrosion	55	1	0	6	0	
Damage by Outside Forces . . .	213	0	1	0	6	
Construction Defect or						
Material Failure	105	0	0	0	3	
Other Causes	37	1	0	8	1	
GAS INDUSTRY TOTALS						
	1,287	8	37	51	340	\$2,632,170

NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D. C. 20591
PIPELINE ACCIDENT REPORT

Adopted: July 1, 1971

MOBIL OIL CORPORATION
HIGH-PRESSURE NATURAL GAS
PIPELINE
Houston, Texas
September 9, 1969

I. SYNOPSIS

At 3:40 p.m. on September 9, 1969, a 14-inch pipeline carrying natural gas at a pressure of more than 780 p.s.i.g. ruptured in a newly constructed residential subdivision 3¼ miles north of Houston, Texas. The escaping gas created a duststorm-like condition and sounded like a jet engine. Electric and telephone utility servicemen working in the area, with the help of local residents, immediately commenced to evacuate all residents in the vicinity of the rupture. About 8 to 10 minutes later, the escaping gas exploded violently. Thirteen houses, ranging from 24 feet to 250 feet from the rupture, were destroyed by the blast. The leaking gas caught fire and continued to burn to heights of 125 feet for 1½ hours until valves on either side of the leak were closed by Mobil workmen dispatched to the valve locations. The fire abated at that time, but some gas burned for another 5 hours. In all, 106 houses were damaged and property damage was estimated at \$500,000. Miraculously, there were no deaths, but nine people were injured, two seriously.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the

accident was the rupturing of a length of pipe along a weak zone in the electric resistance weld, made when the pipe was manufactured in 1941, due to the subjecting of the pipeline to pressures higher than ever before experienced.

Contributing causes to the rupture were: (1) the setting of the regulators to control the gas pressure at levels higher than the maximum allowable operating pressure permitted by the American Standards Association Code for Pressure Piping, and higher than the pressure to which the pipeline was tested, (2) the lack of any written procedures for making the tie-in, (3) the failure of Federal or State regulations to limit the maximum operating pressure.

Contributing to the extent of the damage was the delay in shutting down the pipeline after the rupture occurred.

Appendix 3

Chapter I—Hazardous Materials Regulations Board

Part 192

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

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192.1	Scope of part.
192.3	Definitions.
192.5	Class locations.
192.7	Incorporation by reference.
192.9	Gathering lines.
192.11	Petroleum gas systems.
192.13	General.
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192.59	Plastic pipe.
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192.63	Marking of materials.
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Subpart C—Pipe Design

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192.107	Yield strength (S) for steel pipe.
192.109	Nominal wall thickness (t) for steel pipe.
192.111	Design factor (F) for steel pipe.
192.113	Longitudinal joint factor (E) for steel pipe.
192.115	Temperature derating factor (T) for steel pipe.
192.117	Design of cast iron pipe.
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192.123	Design limitations for plastic pipe.
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Subpart D—Design of Pipeline Components

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192.153	Components fabricated by welding.
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Sec.

192.167	Compressor stations: emergency shutdown.
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192.183	Vaults: structural design requirements.
192.185	Vaults: accessibility.
192.187	Vaults: sealing, venting, and ventilation.
192.189	Vaults: drainage and waterproofing.
192.191	Design pressure of plastic fittings.
192.193	Valve installation in plastic pipe.
192.195	Protection against accidental overpressuring.
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192.199	Requirements for design of pressure relief and limiting devices.
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Subpart E—Welding of Steel in Pipelines

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192.231	Protection from weather.
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Subpart F—Joining of Materials Other Than by Welding

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192.307	Inspection of materials.
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192.313	Bends and elbows.
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Part 192

Title 49—Transportation

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- 192.351 Scope.
192.353 Customer meters and regulators: location.
192.355 Customer meters and regulators: protection from damage.
192.357 Customer meters and regulators: installation.
192.359 Customer meter installations: operating pressure.
192.361 Service lines: installation.
192.363 Service lines: valve requirements.
192.365 Service lines: location of valves.
192.367 Service lines: general requirements for connections to main piping.
192.369 Service lines: connections to cast iron or ductile iron mains.
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192.505 Strength test requirements for steel pipeline to operate at a hoop stress of 30 percent or more of SMYS.
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192.509 Test requirements for pipelines to operate at or below 100 p.s.i.g.
192.511 Test requirements for service lines.
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Subpart K—Up-rating

- 192.551 Scope.
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- 192.601 Scope.
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192.619 Maximum allowable operating pressure: steel or plastic pipelines.
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192.625 Odorization of gas.
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Appendix C—Qualification of welders for low stress level pipe.

AUTHORITY: The provisions of this Part 192 issued under 49 U.S.C. 1671 et seq., unless otherwise noted.

SOURCE: The provisions of this Part 192 appear at 35 F.R. 13257, Aug. 19, 1970, unless otherwise noted.

Subpart A—General**§ 192.1 Scope of part.**

(a) This part prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities and the transportation of gas within the limits of the outer continental shelf as that term is defined in the Outer Continental Shelf Lands Act (43 U.S.C. 1331).

(b) This part does not apply to the gathering of gas outside of the following areas:

(1) An area within the limits of any incorporated or unincorporated city, town, or village.

(2) Any designated residential or commercial area such as a subdivision, business or shopping center, or community development.

§ 192.3 Definitions.

As used in this part—

"Distribution Line" means a pipeline other than a gathering or transmission line.

"Gas" means natural gas, flammable gas, or gas which is toxic or corrosive.

"Gathering Line" means a pipeline that transports gas from a current production facility to a transmission line or main.

"High pressure distribution system" means a distribution system in which the gas pressure in the main is higher than the pressure provided to the customer.

"Listed specification" means a specification listed in section I of Appendix B of this part.

"Low-pressure distribution system" means a distribution system in which the gas pressure in the main is substantially the same as the pressure provided to the customer.

"Main" means a distribution line that serves as a common source of supply for more than one service line.

"Maximum actual operating pressure" means the maximum pressure that occurs during normal operations over a period of 1 year.

"Maximum allowable operating pressure" means the maximum pressure at which a pipeline or segment of a pipeline may be operated under this part.

"Municipality" means a city, county, or any other political subdivision of a State.

"Operator" means a person who engages in the transportation of gas.

"Person" means any individual, firm, joint venture, partnership, corporation, association, State, municipality, cooperative association, or joint stock association, and includes any trustee, receiver, assignee, or personal representative thereof.

"Pipe" means any pipe or tubing used in the transportation of gas, including pipe-type holders.

"Pipeline" means all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

"Pipeline facility" means new and existing pipelines, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.

"Secretary" means the Secretary of Transportation or any person to whom he has delegated authority in the matter concerned.

"Service Line" means a distribution line that transports gas to a customer meter set assembly from a common source of supply.

"SMYS" means specified minimum yield strength is—

(1) For steel pipe manufactured in accordance with a listed specification, the yield strength specified as a minimum in that specification; or

(2) For steel pipe manufactured in accordance with an unknown or unlisted specification, the yield strength determined in accordance with § 192.107(b).

"State" means each of the several States, the District of Columbia, and the Commonwealth of Puerto Rico.

"Transmission line" means a pipeline, other than a gathering line, that—

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(1) Transports gas from a gathering line or storage facility to a distribution center or storage facility;

(2) Operates at a hoop stress of 20 percent or more of SMYS; or

(3) Transports gas within a storage field.

"Transportation of gas" means the gathering, transmission, or distribution of gas by pipeline or the storage of gas, in or affecting interstate or foreign commerce.

§ 192.5 Class locations.

(a) Class location is determined by applying the criteria set forth in this section. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. Except as provided in paragraphs (d) (2) and (f) of this section, the class location is determined by the buildings in the class location unit. For the purposes of this section, each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(b) A Class 1 location is any class location unit that has 10 or less buildings intended for human occupancy.

(c) A Class 2 location is any class location unit that has more than 10 but less than 46 buildings intended for human occupancy.

(d) A Class 3 location is—

(1) Any class location unit that has 46 or more buildings intended for human occupancy; or

(2) An area where the pipeline lies within 100 yards of any of the following:

(i) A building that is occupied by 20 or more persons during normal use.

(ii) A small, well-defined outside area that is occupied by 20 or more persons during normal use, such as a playground, recreation area, outdoor theater, or other place of public assembly.

(e) A Class 4 location is any class location unit where buildings with four or more stories above ground are prevalent.

(f) The boundaries of the class locations determined in accordance with paragraphs (a) through (e) of this section may be adjusted as follows:

(1) A Class 4 location ends 220 yards from the nearest building with four or more stories above ground.

(2) When a cluster of buildings intended for human occupancy requires a

Class 3 location, the Class 3 location ends 220 yards from the nearest building in the cluster.

(3) When a cluster of buildings intended for human occupancy requires a Class 2 location, the Class 2 location ends 220 yards from the nearest building in the cluster.

§ 192.7 Incorporation by reference.

(a) Any documents or parts thereof incorporated by reference in this part are a part of this regulation as though set out in full.

(b) All incorporated documents are available for inspection in the Office of Pipeline Safety, Room 107, 400 Sixth Street SW., Washington, D.C. In addition, the documents are available at the addresses provided in Appendix A to this part.

(c) The full titles for the publications incorporated by reference in this part are provided in Appendix A to this part.

§ 192.9 Gathering lines.

Each gathering line must comply with the requirements of this part applicable to transmission lines.

§ 192.11 Petroleum gas systems.

(a) No operator may transport petroleum gas in a system that serves 10 or more customers, or in a system, any portion of which is located in a public place (such as a highway), unless that system meets the requirements of this part and of NFPA Standards No. 58 and No. 59. In the event of a conflict, the requirements of this part prevail.

(b) Each petroleum gas system covered by paragraph (a) of this section must comply with the following:

(1) Aboveground structures must have open vents near the floor level.

(2) Belowground structures must have forced ventilation that will prevent any accumulation of gas.

(3) Relief valve discharge vents must be located so as to prevent any accumulation of gas at or below ground level.

(4) Special precautions must be taken to provide adequate ventilation where excavations are made to repair an underground system.

(c) For the purpose of this section, petroleum gas means propane, butane, or mixtures of these gases, other than a gas air mixture that is used to supplement supplies in a natural gas distribution system.

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§ 192.13 General.

(a) No person may operate a segment of pipeline that is readied for service after March 12, 1971, unless that pipeline has been designed, installed, constructed, initially inspected, and initially tested in accordance with this part.

(b) No person may operate a segment of pipeline that is replaced, relocated, or otherwise changed after November 12, 1970, unless that replacement, relocation, or change has been made in accordance with this part.

(c) Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.

§ 192.15 Rules of regulatory construction.

(a) As used in this part—

"Includes" means including but not limited to.

"May" means "is permitted to" or "is authorized to".

"May not" means "is not permitted to" or "is not authorized to".

"Shall" is used in the mandatory and imperative sense.

(b) In this part—

(1) Words importing the singular include the plural;

(2) Words importing the plural include the singular; and

(3) Words importing the masculine gender include the feminine.

§ 192.17 Filing of inspection and maintenance plans.

(a) Except as provided in paragraph (b) of this section, each operator shall file with the Secretary not later than February 1, 1971, a plan for inspection and maintenance of each pipeline facility which he owns or operates. In addition, each change to an inspection and maintenance plan must be filed with the Secretary within 20 days after the change is made.

(b) The provisions of paragraph (a) of this section do not apply to pipeline facilities—

(1) That are subject to the jurisdiction of a State agency that has submitted a certification or agreement with respect to those facilities under section 5 of the Natural Gas Pipeline Safety Act (49 U.S.C. 1675); and

(2) For which an inspection and maintenance plan is required to be filed with that State agency.

(c) Plans filed with the Secretary must be sent to the office of Pipeline Safety, Department of Transportation, Washington, D.C. 20590.

(Sec. 11, Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. sec. 1671, et seq.; Part 1, Regulations of Office of the Secretary of Transportation, 49 CFR Part 1; delegation of authority to Director, Office of Pipeline Safety, dated Nov. 6, 1968, 33 F.R. 16468) [35 F.R. 16405, Oct. 21, 1970]

Subpart B—Materials

§ 192.51 Scope.

This subpart prescribes minimum requirements for the selection and qualification of pipe and components for use in pipelines.

§ 192.53 General.

Materials for pipe and components must be—

(a) Able to maintain the structural integrity of the pipeline under temperature and other environmental conditions that may be anticipated;

(b) Chemically compatible with any gas that they transport and with any other material in the pipeline with which they are in contact; and

(c) Qualified in accordance with the applicable requirements of this subpart.

§ 192.55 Steel pipe.

(a) New steel pipe is qualified for use under this part if—

(1) It was manufactured in accordance with a listed specification;

(2) It meets the requirements of paragraphs II-A through II-D of Appendix B of this part; or

(3) It is used in accordance with paragraph (c) or (d) of this section.

(b) Used steel pipe is qualified for use under this part if—

(1) It was manufactured in accordance with a listed specification and it meets the requirements of paragraph II-C of Appendix B to this part;

(2) It meets the requirements of paragraph II-A through II-D of Appendix B to this part.

(3) It has been used in an existing line of the same or higher pressure and meets the requirement of paragraph II-C of Appendix B to this part; or

(4) It is used in accordance with paragraph (c) of this section.

(c) New or used steel pipe may be used at a pressure resulting in a hoop stress of less than 6,000 p.s.i. where no close coil-

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ing or close bending is to be done, if visual examination indicates that the pipe is in good condition and that it is free of split seams and other defects that would cause leakage. If it is to be welded, steel pipe that has not been manufactured to a listed specification must also pass the weldability tests prescribed in paragraph II-B of Appendix B to this part.

(d) Steel pipe that has not been previously used may be used as replacement pipe in a segment of pipeline if it has been manufactured prior to November 12, 1970, in accordance with the same specification as the pipe used in constructing that segment of pipeline.

(e) New steel pipe that has been cold expanded must comply with the mandatory provisions of API Standard 5LX.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.57 Cast iron or ductile iron pipe.

(a) New cast iron or new ductile iron pipe is qualified for use under this part if it has been manufactured in accordance with a listed specification.

(b) Used cast iron or used ductile iron pipe is qualified for use under this part if inspection shows that the pipe is sound and allows the makeup of tight joints and—

(1) It has been removed from an existing pipeline that operated at the same or higher pressure; or

(2) It was manufactured in accordance with a listed specification.

§ 192.59 Plastic pipe.

(a) New plastic pipe is qualified for use under this part if—

(1) It is manufactured in accordance with a listed specification; and

(2) It is resistant to chemicals with which contact may be anticipated.

(b) Used plastic pipe is qualified for use under this part if—

(1) It meets the requirements of a listed specification;

(2) It is resistant to chemicals with which contact may be anticipated;

(3) It has been used only in natural gas service;

(4) Its dimensions are still within the tolerances of the specification to which it was manufactured; and

(5) It is free of visible defects.

§ 192.61 Copper pipe.

Copper pipe is qualified for use under this part if it has been manufactured in accordance with a listed specification.

§ 192.63 Marking of materials.

(a) Except as provided in paragraph (d) of this section, each valve, fitting, length of pipe, and other component must be marked as prescribed in—

(1) The specification or standard to which it was manufactured; or

(2) MSS Standard Practice, SP-25.

(b) Surfaces of pipe and components that are subject to stress from internal pressure may not be field die stamped.

(c) If any item is marked by die stamping, the die must have blunt or rounded edges that will minimize stress concentrations.

(d) Paragraph (a) of this section does not apply to items manufactured before November 12, 1970, that meet all of the following:

(1) The item is identifiable as to type, manufacturer, and model.

(2) Specifications or standards giving pressure, temperature, and other appropriate criteria for the use of items are readily available.

[Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.65 Transportation of pipe.

In a pipeline to be operated at a hoop stress of 20 percent or more of SMYS, no operator may use pipe having an outer diameter to wall thickness ratio of 70 to one, or more, that is transported by railroad unless that transportation was performed in accordance with API RP5L1.

Subpart C—Pipe Design

§ 192.101 Scope.

This subpart prescribes the minimum requirements for the design of pipe.

§ 192.103 General.

Pipe must be designed with sufficient wall thickness, or must be installed with adequate protection, to withstand anticipated external pressures and loads that will be imposed on the pipe after installation.

§ 192.105 Design formula for steel pipe.

(a) The design pressure for steel pipe is determined in accordance with the following formula:

$$P = \frac{2 St}{D} \times F \times E \times T$$

P=Design pressure in pounds per square inch gage.

S=Yield strength in pounds per square inch determined in accordance with § 192.107.

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D = Nominal outside diameter of the pipe in inches.

t = Nominal wall thickness of the pipe in inches. If this is unknown, it is determined in accordance with § 192.109. Additional wall thickness required for concurrent external loads in accordance with § 192.103 may not be included in computing design pressure.

F = Design factor determined in accordance with § 192.111.

E = Longitudinal joint factor determined in accordance with § 192.113.

T = Temperature derating factor determined in accordance with § 192.115.

(b) If steel pipe that has been cold worked to meet the SMYS is heated, other than by welding, to 600° F. or more, the design pressure is limited to 75 percent of the pressure determined under paragraph (a) of this section.

§ 192.107 Yield strength (S) for steel pipe.

(a) For pipe that is manufactured in accordance with a specification listed in section I of Appendix B of this part, the yield strength to be used in the design formula in § 192.105 is the SMYS stated in the listed specification, if that value is known.

(b) For pipe that is manufactured in accordance with a specification not listed in section I of Appendix B to this part or whose specification or tensile properties are unknown, the yield strength to be used in the design formula in § 192.105 is one of the following:

(1) If the pipe is tensile tested in accordance with section 11-D of Appendix B to this part, the lower of the following:

(i) 80 percent of the average yield strength determined by the tensile tests.

(ii) The lowest yield strength determined by the tensile tests, but not more than 52,000 p.s.i.

(2) If the pipe is not tensile tested as provided in subparagraph (1) of this paragraph 24,000 p.s.i.

§ 192.109 Nominal wall thickness (t) for steel pipe.

(a) If the nominal wall thickness for steel pipe is not known, it is determined by measuring the thickness of each piece of pipe at quarter points on one end.

(b) However, if the pipe is of uniform grade, size, and thickness and there are more than 10 lengths, only 10 percent of the individual lengths, but not less than 10 lengths, need be measured. The thickness of the lengths that are not measured must be verified by applying a

gage set to the minimum thickness found by the measurement. The nominal wall thickness to be used in the design formula in § 192.105 is the next wall thickness found in commercial specifications that is below the average of all the measurements taken. However, the nominal wall thickness used may not be more than 1.14 times the smallest measurement taken on pipe less than 20 inches in outside diameter, nor more than 1.11 times the smallest measurement taken on pipe 20 inches or more in outside diameter.

§ 192.111 Design factor (F) for steel pipe.

(a) Except as otherwise provided in paragraphs (b), (c), and (d) of this section, the design factor to be used in the design formula in § 192.105 is determined in accordance with the following table:

Class location	Design factor (F)
1 -----	0.72
2 -----	0.60
3 -----	0.50
4 -----	0.40

(b) A design factor of 0.60 or less must be used in the design formula in § 192.105 for steel pipe in Class 1 locations that:

(1) Crosses the right-of-way of an unimproved public road, without a casing;

(2) Crosses without a casing, or makes a parallel encroachment on, the right-of-way of either a hard surfaced road, a highway, a public street, or a railroad;

(3) Is supported by a vehicular, pedestrian, railroad, or pipeline bridge; or

(4) Is used in a fabricated assembly, (including separators, mainline valve assemblies, cross-connections, and river crossing headers) or is used within five pipe diameters in any direction from the last fitting of a fabricated assembly, other than a transition piece or an elbow used in place of a pipe bend which is not associated with a fabricated assembly.

(c) For Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in § 192.105 for uncased steel pipe that crosses the right-of-way of a hard surfaced road, a highway, a public street, or a railroad.

(d) For Class 1 or Class 2 locations, a design factor of 0.50, or less, must be used in the design formula in § 192.105 for each compressor station, regulator station, and measuring station.

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§ 192.113 Longitudinal joint factor (*E*) for steel pipe.

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

Specification	Pipe class	Longitudinal joint factor (<i>E</i>)
ASTM A 53.....	Seamless.....	1.00
	Electric resistance welded....	1.00
	Furnace butt welded.....	.60
ASTM A 106.....	Seamless.....	1.00
	Electric fusion arc welded....	.80
ASTM A 135.....	Electric resistance welded....	1.00
ASTM A 139.....	Electric fusion welded.....	.80
ASTM A 155.....	Electric fusion arc welded....	1.00
ASTM A 211.....	Spiral welded steel pipe.....	.80
ASTM A 333.....	Seamless.....	1.00
	Electric resistance welded....	1.00
ASTM A 381.....	Double submerged arc 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 welded.....	.60
	Furnace lap-welded.....	.80
API 5 LX.....	Seamless.....	1.00
	Electric resistance welded....	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 inches.....	.80
Other.....	Pipe 4 inches or less.....	.60

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

§ 192.115 Temperature derating factor (*T*) for steel pipe.

The temperature derating factor to be used in the design formula in § 192.105 is determined as follows:

Gas temperature in degrees Fahrenheit	Temperature derating factor (<i>T</i>)
250 or less.....	1.000
300.....	0.967
350.....	0.933
400.....	0.900
450.....	0.867

For intermediate gas temperatures, the derating factor is determined by interpolation.

§ 192.117 Design of cast iron pipe.

Cast iron pipe must be designed in accordance with ANSI A 21.1 using the following values for *S* (bursting tensile strength) and *R* (modulus of rupture) in the design equations:

Specification	Type of pipe	<i>S</i>	<i>R</i>
ANSI A 21.3.....	Pit cast.....	psi 11,000	psi 31,000
ANSI A 21.7.....	Centrifugal (metal mold).....	18,000	40,000
ANSI A 21.9.....	Centrifugal (sand-lined mold).....	13,000	40,000

§ 192.119 Design of ductile iron pipe.

(a) Ductile iron pipe must be designed in accordance with ANSI A21.50 using the following values in the design equations:

s (design hoop stress) = 18,800 p.s.i.

f (design bending stress) = 36,000 p.s.i.

(b) Ductile iron pipe must be grade (60–42–10) and must conform to the requirements of ANSI A21.52.

§ 192.121 Design of plastic pipe.

(a) The design pressure for plastic pipe is determined in accordance with the following formula and is subject to the limitations of § 192.123:

$$P = 2S \frac{t}{(D-t)} \times F$$

P = Design pressure in pounds per square inch gage.

S = For thermoplastic pipe, the long-term hydrostatic strength in pounds per square inch as stated in the listed specification; for thermosetting plastic pipe, 11,000 p.s.i.

t = Specified wall thickness in inches.

D = Specified outside diameter in inches.

F = Design factor for plastic pipe.

(b) The design factor for plastic pipe is determined as follows:

Class location	Design factor
1.....	0.32
2.....	0.25
3.....	0.25
4.....	0.20

§ 192.123 Design limitations for plastic pipe.

(a) The design pressure may not exceed 100 p.s.i.g. for plastic pipe used in—

- (1) Distribution systems; or
- (2) Classes 3 and 4 locations.

(b) Plastic pipe may not be used where operating temperatures of the pipe will be—

- (1) Below minus 20° F.; or
- (2) Above 100° F. for thermoplastic pipe or above 150° F. for reinforced thermosetting plastic pipe.

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(c) The wall thickness for thermoplastic pipe may not be less than 0.062 inches.

(d) The wall thickness for reinforced thermosetting plastic pipe may not be less than that listed in the following table:

Nominal size in inches	Minimum wall thickness in inches
2	0.060
3	0.060
4	0.070
6	0.100

§ 192.125 Design of copper pipe.

(a) Copper pipe used in mains must have a minimum wall thickness of 0.065 inches and must be hard drawn.

(b) Copper pipe used in service lines must have a minimum wall thickness as specified for type "L" pipe in ASTM B 88.

(c) Copper pipe used in mains and service lines may not be used at pressures in excess of 100 p.s.i.g.

(d) Copper pipe that does not have an internal corrosion resistant lining may not be used to carry gas that has an average hydrogen sulfide content of more than 0.3 grains per 100 standard cubic feet of gas.

Subpart D—Design of Pipeline Components

§ 192.141 Scope.

This subpart prescribes minimum requirements for the design and installation of pipeline components and facilities. In addition, it prescribes requirements relating to protection against accidental overpressuring.

§ 192.143 General requirements.

Each component of a pipeline must be able to withstand operating pressures and other anticipated loadings with unit stresses equivalent to those allowed for comparable material in pipe in the same location and kind of service.

§ 192.145 Valves.

(a) Each valve must meet the minimum requirements of API 6A, API 6D, or MSS SP-52, or the equivalent, and may not be used under operating conditions that exceed the applicable pressure-temperature ratings contained in those standards.

(b) Each valve must be able to meet the anticipated operating conditions.

(c) No valve having shell components made of ductile iron may be used at pressures exceeding 80 percent of the pressure ratings for comparable steel valves at their listed temperature. However, a valve having shell components made of ductile iron may be used at pressures up to 80 percent of the pressure ratings for comparable steel valves at their listed temperature, if—

(1) The temperature-adjusted service pressure does not exceed 1,000 p.s.i.g.; and

(2) Welding is not used on any ductile iron component in the fabrication of the valve shells or their assembly.

(d) No valve having pressure containing parts made of ductile iron may be used in the gas pipe components of compressor stations.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.147 Flanges and flange accessories.

(a) *General requirements.* Each flange or flange accessory must meet the minimum requirements of ANSI B16.5, MSS SP-44, or ANSI B16.24, or the equivalent.

(b) Each flange assembly must be able to withstand the maximum pressure at which the pipeline is to be operated and to maintain its physical and chemical properties at any temperature to which it is anticipated that it might be subjected in service.

§ 192.149 Standard fittings.

(a) The minimum metal thickness of threaded fittings may not be less than specified for the pressures and temperatures in the applicable standards referenced in this part, or their equivalent.

(b) Each steel butt-welding fitting must have pressure and temperature ratings based on stresses for pipe of the same or equivalent material. The actual bursting strength of the fitting must at least equal the computed bursting strength of pipe of the designated material and wall thickness, as determined by a prototype that was tested to at least the pressure required for the pipeline to which it is being added.

§ 192.151 Tapping.

(a) Each mechanical fitting used to make a hot tap must be designed for at least the operating pressure of the pipeline.

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(b) Where a ductile iron pipe is tapped, the extent of full-thread engagement and the need for the use of outside-sealing service connections, tapping saddles, or other fixtures must be determined by service conditions.

(c) Where a threaded tap is made in cast iron or ductile iron pipe, the diameter of the tapped hole may not be more than 25 percent of the nominal diameter of the pipe unless the pipe is reinforced, except that

(1) Existing taps may be used for replacement service, if they are free of cracks and have good threads; and

(2) A 1½-inch tap may be made in a 4-inch cast iron or ductile iron pipe, without reinforcement.

However, in areas where climate, soil, and service conditions may create unusual external stresses on cast iron pipe, unreinforced taps may be used only on 6-inch or larger pipe.

§ 192.153 Components fabricated by welding.

(a) Except for branch connections and assemblies of standard pipe and fittings joined by circumferential welds, the design pressure of each component fabricated by welding, whose strength cannot be determined, must be established in accordance with paragraph UG-101 of section VIII of the ASME Boiler and Pressure Vessel Code.

(b) Each prefabricated unit that uses plate and longitudinal seams must be designated, constructed, and tested in accordance with the ASME Boiler and Pressure Vessel Code, except for the following:

(1) Regularly manufactured butt-welding fittings.

(2) Pipe that has been produced and tested under a specification listed in Appendix B to this part.

(3) Partial assemblies such as split rings or collars.

(4) Prefabricated units that the manufacturer certifies have been tested to at least twice the maximum pressure to which they will be subjected under the anticipated operating conditions.

(c) Orange-peel bull plugs and orange-peel swages may not be used on pipelines that are to operate at a hoop stress of 20 percent or more of the SMYS of the pipe.

(d) Except for flat closures designed in accordance with section VIII of the ASME Boiler and Pressure Code, flat

closures and fish tails may not be used on pipe that either operates at 100 p.s.i.g., or more, or is more than 3 inches nominal diameter.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.155 Welded branch connections.

Each welded branch connection made to pipe in the form of a single connection, or in a header or manifold as a series of connections, must be designed to ensure that the strength of the pipeline system is not reduced, taking into account the stresses in the remaining pipe wall due to the opening in the pipe or header, the shear stresses produced by the pressure acting on the area of the branch opening, and any external loadings due to thermal movement, weight, and vibration.

§ 192.157 Extruded outlets.

Each extruded outlet must be suitable for anticipated service conditions and must be at least equal to the design strength of the pipe and other fittings in the pipeline to which it is attached.

§ 192.159 Flexibility.

Each pipeline must be designed with enough flexibility to prevent thermal expansion or contraction from causing excessive stresses in the pipe or components, excessive bending or unusual loads at joints, or undesirable forces or moments at points of connection to equipment, or at anchorage or guide points.

§ 192.161 Supports and anchors.

(a) Each pipeline and its associated equipment must have enough anchors or supports to—

(1) Prevent undue strain on connected equipment;

(2) Resist longitudinal forces caused by a bend or offset in the pipe; and

(3) Prevent or damp out excessive vibration.

(b) Each exposed pipeline must have enough supports or anchors to protect the exposed pipe joints from the maximum end force caused by internal pressure and any additional forces caused by temperature expansion or contraction or by the weight of the pipe and its contents.

(c) Each support or anchor on an exposed pipeline must be made of durable, noncombustible material and must be designed and installed as follows:

(1) Free expansion and contraction of the pipeline between supports or anchors may not be restricted.

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(2) Provision must be made for the service conditions involved.

(3) Movement of the pipeline may not cause disengagement of the support equipment.

(d) Each support on an exposed pipeline operated at a stress level of 50 percent or more of SMYS must comply with the following:

(1) A structural support may not be welded directly to the pipe.

(2) The support must be provided by a member that completely encircles the pipe.

(3) If an encircling member is welded to a pipe, the weld must be continuous and cover the entire circumference.

(e) Each underground pipeline that is connected to a relatively unyielding line or other fixed object must have enough flexibility to provide for possible movement, or it must have an anchor that will limit the movement of the pipeline.

(f) Each underground pipeline that is being connected to new branches must have a firm foundation for both the header and the branch to prevent lateral and vertical movement.

§ 192.163 Compressor stations: design and construction.

(a) *Location of compressor building.* Each main compressor building of a compressor station must be located on property under the control of the operator. It must be far enough away from adjacent property, not under control of the operator, to minimize the possibility of fire being communicated to the compressor building from structures on adjacent property. There must be enough open space around the main compressor building to allow the free movement of fire-fighting equipment.

(b) *Building construction.* Each building on a compressor station site must be made of noncombustible materials if it contains either—

(1) Pipe more than 2 inches in diameter that is carrying gas under pressure; or

(2) Gas handling equipment other than gas utilization equipment used for domestic purposes.

(c) *Exits.* Each operating floor of a main compressor building must have at least two separated and unobstructed exits located so as to provide a convenient possibility of escape and an unobstructed passage to a place of safety. Each door latch on an exit must be of a type which can be readily opened from

the inside without a key. Each swinging door located in an exterior wall must be mounted to swing outward.

(d) *Fenced areas.* Each fence around a compressor station must have at least two gates located so as to provide a convenient opportunity for escape to a place of safety, or have other facilities affording a similarly convenient exit from the area. Each gate located within 200 feet of any compressor plant building must open outward and, when occupied, must be openable from the inside without a key.

(e) *Electrical facilities.* Electrical equipment and wiring installed in compressor stations must conform to the National Electrical Code, ANSI Standard C1, so far as that code is applicable.

§ 192.165 Compressor stations: liquid removal.

(a) Where entrained vapors in gas may liquefy under the anticipated pressure and temperature conditions, the compressor must be protected against the introduction of those liquids in quantities that could cause damage.

(b) Each liquid separator used to remove entrained liquids at a compressor station must—

(1) Have a manually operable means of removing these liquids.

(2) Where slugs of liquid could be carried into the compressors, have either automatic liquid removal facilities, an automatic compressor shutdown device, or a high liquid level alarm; and

(3) Be manufactured in accordance with section VIII of the ASME Boiler and Pressure Vessel Code, except that liquid separators constructed of pipe and fittings without internal welding must be fabricated with a design factor of 0.4, or less.

§ 192.167 Compressor stations: emergency shutdown.

(a) Except for unattended field compressor stations of 1,000 horsepower or less, each compressor station must have an emergency shutdown system that meets the following:

(1) It must be able to block gas out of the station and blow down the station piping.

(2) It must discharge gas from the blowdown piping at a location where the gas will not create a hazard.

(3) It must provide means for the shutdown of gas compressing equipment, gas fires, and electrical facilities in the

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vicinity of gas headers and in the compressor building, except, that—

(i) Electrical circuits that supply emergency lighting required to assist station personnel in evacuating the compressor building and the area in the vicinity of the gas headers must remain energized; and

(ii) Electrical circuits needed to protect equipment from damage may remain energized.

(4) It must be operable from at least two locations, each of which is—

(i) Outside the gas area of the station;

(ii) Near the exit gates in the station fence; and

(iii) Not more than 500 feet from the limits of the station.

(b) If a compressor station supplies gas directly to a distribution system with no other adequate source of gas available, the emergency shutdown system must be designed so that it will not function at the wrong time and cause an unintended outage on the distribution system.

§ 192.169 Compressor stations: pressure limiting devices.

(a) Each compressor station must have pressure relief or other suitable protective devices of sufficient capacity and sensitivity to ensure that the maximum allowable operating pressure of the station piping and equipment is not exceeded by more than 10 percent.

(b) Each vent line that exhausts gas from the pressure relief valves of a compressor station must extend to a location where the gas may be discharged without hazard.

§ 192.171 Compressor stations: additional safety equipment.

(a) Each compressor station must have adequate fire protection facilities. If fire pumps are a part of these facilities, their operation may not be affected by the emergency shutdown system.

(b) Each compressor station prime mover, other than an electrical induction or synchronous motor, must have an automatic device to shut down the unit before the speed of either the prime mover or the driven unit exceeds a maximum safe speed.

(c) Each compressor unit in a compressor station must have a shutdown or alarm device that operates in the event of inadequate cooling or lubrication of the unit.

(d) Each compressor station gas engine that operates with pressure gas injection must be equipped so that stoppage of the engine automatically shuts off the fuel and vents the engine distribution manifold.

(e) Each muffler for a gas engine in a compressor station must have vent slots or holes in the baffles of each compartment to prevent gas from being trapped in the muffler.

§ 192.173 Compressor stations: ventilation.

Each compressor station building must be ventilated to ensure that employees are not endangered by the accumulation of gas in rooms, sumps, attics, pits, or other enclosed places.

§ 192.175 Pipe-type and bottle-type holders.

(a) Each pipe-type and bottle-type holder must be designed so as to prevent the accumulation of liquids in the holder, in connecting pipe, or in auxiliary equipment, that might cause corrosion or interfere with the safe operation of the holder.

(b) Each pipe-type or bottle-type holder must have minimum clearance from other holders in accordance with the following formula:

$$C = \frac{3D \times P \times F}{1,000}$$

in which:

C = Minimum clearance between pipe containers or bottles in inches.

D = Outside diameter of pipe containers or bottles in inches.

P = Maximum allowable operating pressure, p.s.i.g.

F = Design factor as set forth in § 192.111 of this part.

§ 192.177 Additional provisions for bottle-type holder.

(a) Each bottle-type holder must be—

(1) Located on a storage site entirely surrounded by fencing that prevents access by unauthorized persons and with minimum clearance from the fence as follows:

Maximum allowable operating pressure	Minimum clearance (feet)
Less than 1,000 p.s.i.g.	25
1,000 p.s.i.g. or more	100

(2) Designed using the design factors set forth in § 192.111; and

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(3) Buried with a minimum cover in accordance with § 192.327.

(b) Each bottle-type holder manufactured from steel that is not weldable under field conditions must comply with the following:

(1) A bottle-type holder made from alloy steel must meet the chemical and tensile requirements for the various grades of steel in either API Standard 5A or ASTM A 372.

(2) The actual yield-tensile ratio of the steel may not exceed 0.85.

(3) Welding may not be performed on the holder after it has been heat treated or stress relieved, except that copper wires may be attached to the small diameter portion of the bottle end closure for cathodic protection if a localized thermit welding process is used.

(4) The holder must be given a mill hydrostatic test at a pressure that produces a hoop stress at least equal to 85 percent of the SMYS.

(5) The holder, connection pipe, and components must be leak tested after installation as required by Subpart J of this part.

§ 192.179 Transmission line valves.

(a) Each transmission line, other than offshore segments, must have sectionalizing block valves spaced as follows:

(1) Each point on the pipeline in a Class 4 location must be within 2½ miles of a valve.

(2) Each point on the pipeline in a Class 3 location must be within 4 miles of a valve.

(3) Each point on the pipeline in a Class 2 location must be within 7½ miles of a valve.

(4) Each point on the pipeline in a Class 1 location must be within 10 miles of a valve.

(b) Each sectionalizing block valve on a transmission line, other than offshore segments, must comply with the following:

(1) The valve and the operating device to open or close the valve must be readily accessible and protected from tampering and damage.

(2) The valve must be supported to prevent settling of the valve or movement of the pipe to which it is attached.

(c) Each section of a transmission line, other than offshore segments, between main line valves must have a blow-

down valve with enough capacity to allow the transmission line to be blown down as rapidly as practicable. Each blowdown discharge must be located so the gas can be blown to the atmosphere without hazard and, if the transmission line is adjacent to an overhead electric line, so that the gas is directed away from the electrical conductors.

§ 192.181 Distribution line valves.

(a) Each high-pressure distribution system must have valves spaced so as to reduce the time to shut down a section of main in an emergency. The valve spacing is determined by the operating pressure, the size of the mains, and the local physical conditions.

(b) Each regulator station controlling the flow or pressure of gas in a distribution system must have a valve installed on the inlet piping at a distance from the regulator station sufficient to permit the operation of the valve during an emergency that might preclude access to the station.

(c) Each valve on a main installed for operating or emergency purposes must comply with the following:

(1) The valve must be placed in a readily accessible location so as to facilitate its operation in an emergency.

(2) The operating stem or mechanism must be readily accessible.

(3) If the valve is installed in a buried box or enclosure, the box or enclosure must be installed so as to avoid transmitting external loads to the main.

§ 192.183 Vaults: structural design requirements.

(a) Each underground vault or pit for valves, pressure relieving, pressure limiting, or pressure regulating stations, must be able to meet the loads which may be imposed upon it, and to protect installed equipment.

(b) There must be enough working space so that all of the equipment required in the vault or pit can be properly installed, operated, and maintained.

(c) Each pipe entering, or within, a regulator vault or pit must be steel for sizes 10 inches, and less, except that control and gage piping may be copper. Where pipe extends through the vault or pit structure, provision must be made to prevent the passage of gasses or liquids through the opening and to avert strains in the pipe.

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§ 192.185 Vaults: accessibility.

Each vault must be located in an accessible location and, so far as practical, away from—

(a) Street intersections or points where traffic is heavy or dense;

(b) Points of minimum elevation, catch basins, or places where the access cover will be in the course of surface waters; and

(c) Water, electric, steam, or other facilities.

§ 192.187 Vaults: sealing, venting, and ventilation.

Each underground vault or closed top pit containing either a pressure regulating or reducing station, or a pressure limiting or relieving station, must be sealed, vented or ventilated, as follows:

(a) When the internal volume exceeds 200 cubic feet—

(1) The vault or pit must be ventilated with two ducts, each having at least the ventilating effect of a pipe 4 inches in diameter;

(2) The ventilation must be enough to minimize the formation of combustible atmosphere in the vault or pit; and

(3) The ducts must be high enough above grade to disperse any gas-air mixtures that might be discharged.

(b) When the internal volume is more than 75 cubic feet but less than 200 cubic feet—

(1) If the vault or pit is sealed, each opening must have a tight fitting cover without open holes through which an explosive mixture might be ignited, and there must be a means for testing the internal atmosphere before removing the cover;

(2) If the vault or pit is vented, there must be a means of preventing external sources of ignition from reaching the vault atmosphere; or

(3) If the vault or pit is ventilated, paragraph (a) or (c) of this section applies.

(c) If a vault or pit covered by paragraph (b) of this section is ventilated by openings in the covers or gratings and the ratio of the internal volume, in cubic feet, to the effective ventilating area of the cover or grating, in square feet, is less than 20 to 1, no additional ventilation is required.

§ 192.189 Vaults: drainage and waterproofing.

(a) Each vault must be designed so as to minimize the entrance of water.

(b) A vault containing gas piping may not be connected by means of a drain connection to any other underground structure.

(c) All electrical equipment in vaults must conform to the applicable requirements of Class 1, Group D, of the National Electrical Code, ANSI Standard C1.

§ 192.191 Design pressure of plastic fittings.

(a) Thermosetting fittings for plastic pipe must conform to ASTM D 2517.

(b) The design pressure of acrylonitrile-butadiene-styrene (ABS) and polyvinyl chloride (PVC) Schedule 40 and 80 thermoplastic fittings must be obtained from the following table:

DESIGN PRESSURE OF THERMOPLASTIC FITTINGS.
P.S.I.G. OF VARIOUS STRENGTHS, MATERIALS
AND CLASS LOCATIONS

Size Inches	Schedule	ABS Type I and PVC Type II class location			PVC Type I class location		
		1	2 and 3	4	1	2 and 3	4
1/2	40	100	100	100	100	100	100
	80	100	100	100	100	100	100
3/4	40	100	100	95	100	100	100
	80	100	100	100	100	100	100
1	40	100	100	90	100	100	100
	80	100	100	100	100	100	100
1 1/4	40	100	92	74	100	100	100
	80	100	100	100	100	100	100
1 1/2	40	100	85	66	100	100	100
	80	100	100	94	100	100	100
2	40	80	69	55	100	100	100
	80	100	100	81	100	100	100
2 1/2	40	69	58	45	100	100	100
	80	100	100	82	100	100	100
3	40	84	66	53	100	100	100
	80	100	94	75	100	100	100
3 1/2	40	77	60	48	100	100	100
	80	100	86	69	100	100	100
4	40	71	56	44	100	100	100
	80	100	81	65	100	100	100
5	40	62	49	39	100	100	100
	80	93	72	58	100	100	100
6	40	56	44	35	100	88	71
	80	89	70	55	100	100	100

NOTE: These pressure ratings are the same as in the design pressure of the corresponding pipe size and schedule in the same class location, as determined by the formula given in § 192.121 and the limitation in § 192.123 of this part.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.193 Valve installation in plastic pipe.

Each valve installed in plastic pipe must be designed so as to protect the plastic material against excessive torsional or shearing loads when the valve or shutoff is operated, and from any other secondary stresses that might be exerted through the valve or its enclosure.

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§ 192.195 Protection against accidental overpressuring.

(a) *General requirements.* Except as provided in § 192.197, each pipeline that is connected to a gas source so that the maximum allowable operating pressure could be exceeded as the result of pressure control failure or of some other type of failure, must have pressure relieving or pressure limiting devices that meet the requirements of §§ 192.199 and 192.201.

(b) *Additional requirements for distribution systems.* Each distribution system that is supplied from a source of gas that is at a higher pressure than the maximum allowable operating pressure for the system must—

(1) Have pressure regulation devices capable of meeting the pressure, load, and other service conditions that will be experienced in normal operation of the system, and that could be activated in the event of failure of some portion of the system; and

(2) Be designed so as to prevent accidental overpressuring.

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

(a) If the maximum actual operating pressure of the distribution system is under 60 p.s.i.g. and a service regulator having the following characteristics is used, no other pressure limiting device is required:

(1) A regulator capable of reducing distribution line pressure to pressures recommended for household appliances.

(2) A single port valve with proper orifice for the maximum gas pressure at the regulator inlet.

(3) A valve seat made of resilient material designed to withstand abrasion of the gas, impurities in gas, cutting by the valve, and to resist permanent deformation when it is pressed against the valve port.

(4) Pipe connections to the regulator not exceeding 2 inches in diameter.

(5) A regulator that, under normal operating conditions, is able to regulate the downstream pressure within the necessary limits of accuracy and to limit the build-up of pressure under no-flow conditions to prevent a pressure that would cause the unsafe operation of any connected and properly adjusted gas utilization equipment.

(6) A self-contained service regulator with no external static or control lines.

(b) If the maximum actual operating pressure of the distribution system is 60 p.s.i.g., or less, and a service regulator that does not have all of the characteristics listed in paragraph (a) of this section is used, or if the gas contains materials that seriously interfere with the operation of service regulators, there must be suitable protective devices to prevent unsafe overpressuring of the customer's appliances if the service regulator fails.

(c) If the maximum actual operating pressure of the distribution system exceeds 60 p.s.i.g., one of the following methods must be used to regulate and limit, to the maximum safe value, the pressure of gas delivered to the customer:

(1) A service regulator having the characteristics listed in paragraph (a) of this section, and another regulator located upstream from the service regulator. The upstream regulator may not be set to maintain a pressure higher than 60 p.s.i.g. A device must be installed between the upstream regulator and the service regulator to limit the pressure on the inlet of the service regulator to 60 p.s.i.g. or less in case the upstream regulator fails to function properly. This device may be either a relief valve or an automatic shutoff that shuts, if the pressure on the inlet of the service regulator exceeds the set pressure (60 p.s.i.g. or less), and remains closed until manually reset.

(2) A service regulator and a monitoring regulator set to limit, to a maximum safe value, the pressure of the gas delivered to the customer.

(3) A service regulator with a relief valve vented to the outside atmosphere, with the relief valve set to open so that the pressure of gas going to the customer does not exceed a maximum safe value. The relief valve may either be built into the service regulator or it may be a separate unit installed downstream from the service regulator. This combination may be used alone only in those cases where the inlet pressure on the service regulator does not exceed the manufacturer's safe working pressure rating of the service regulator, and may not be used where the inlet pressure on the service regulator exceeds 125 p.s.i.g. For higher inlet pressures, the methods in subparagraph (1) or (2) of this paragraph must be used.

(4) A service regulator and an automatic shutoff device that closes upon a

rise in pressure downstream from the regulator and remains closed until manually reset.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.199 Requirements for design of pressure relief and limiting devices.

Except for rupture discs, each pressure relief or pressure limiting device must—

(a) Be constructed of materials such that the operation of the device will not be impaired by corrosion;

(b) Have valves and valve seats that are designed not to stick in a position that will make the device inoperative;

(c) Be designed and installed so that it can be readily operated to determine if the valve is free, can be tested to determine the pressure at which it will operate, and can be tested for leakage when in the closed position;

(d) Have support made of noncombustible material;

(e) Have discharge stacks, vents, or outlet ports designed to prevent accumulation of water, ice, or snow, located where gas can be discharged into the atmosphere without undue hazard;

(f) Be designed and installed so that the size of the openings, pipe, and fittings located between the system to be protected and the pressure relieving device, and the size of the vent line, are adequate to prevent hammering of the valve and to prevent impairment of relief capacity;

(g) Where installed at a district regulator station to protect a pipeline system from overpressuring, be designed and installed to prevent any single incident such as an explosion in a vault or damage by a vehicle from affecting the operation of both the overpressure protective device and the district regulator; and

(h) Except for a valve that will isolate the system under protection from its source of pressure, be designed to prevent unauthorized operation of any stop valve that will make the pressure relief valve or pressure limiting device inoperative.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.201 Required capacity of pressure relieving and limiting stations.

(a) Each pressure relief station or pressure limiting station or group of those stations installed to protect a pipe-

line must have enough capacity, and must be set to operate, to prevent—

(1) The pressure from exceeding the maximum allowable operating pressure plus 10 percent or the pressure that produces a hoop stress of 75 percent of SMYS, whichever is lower; or

(2) In a low-pressure distribution system, a pressure that would cause the unsafe operation of any connected and properly adjusted gas utilization equipment.

(b) When more than one pressure regulating or compressor station feeds into a pipeline, relief valves or other protective devices must be installed at each station to ensure that the complete failure of the largest capacity regulator or compressor, or any single run of lesser capacity regulators or compressors in that station, will not impose pressures on any part of the pipeline or distribution system in excess of those for which it was designed, or against which it was protected, whichever is lower.

(c) Relief valves or other pressure limiting devices must be installed at or near each regulator station in a low-pressure distribution system, with a capacity to limit the maximum pressure in the main to a pressure that will not exceed the safe operating pressure for any connected and properly adjusted gas utilization equipment.

§ 192.203 Instrument, control, and sampling pipe and components.

(a) *Applicability.* This section applies to the design of instrument, control, and sampling pipe and components. It does not apply to permanently closed systems, such as fluid-filled temperature-responsive devices.

(b) *Materials and design.* All materials employed for pipe and components must be designed to meet the particular conditions of service and the following:

(1) Each takeoff connection and attaching boss, fitting, or adapter must be made of suitable material, be able to withstand the maximum service pressure and temperature of the pipe or equipment to which it is attached, and be designed to satisfactorily withstand all stresses without failure by fatigue.

(2) A shutoff valve must be installed in each takeoff line as near as practicable to the point of takeoff. Blowdown valves must be installed where necessary,

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(3) Brass or copper material may not be used for metal temperatures greater than 400° F.

(4) Pipe or components that may contain liquids must be protected by heating or other means from damage due to freezing.

(5) Pipe or components in which liquids may accumulate must have drains or drips.

(6) Pipe or components subject to clogging from solids or deposits must have suitable connections for cleaning.

(7) The arrangement of pipe, components, and supports must provide safety under anticipated operating stresses.

(8) Each joint between sections of pipe, and between pipe and valves or fittings, must be made in a manner suitable for the anticipated pressure and temperature condition. Slip type expansion joints may not be used. Expansion must be allowed for by providing flexibility within the system itself.

(9) Each control line must be protected from anticipated causes of damage and must be designed and installed to prevent damage to any one control line from making both the regulator and the over-pressure protective device inoperative.

Subpart E—Welding of Steel in Pipelines

§ 192.221 Scope.

(a) This subpart prescribes minimum requirements for welding steel materials in pipelines.

(b) This subpart does not apply to welding that occurs during the manufacture of steel pipe or steel pipeline components.

§ 192.223 General.

(a) Welding must be performed in accordance with established written welding procedures that have been qualified under § 192.225 to produce sound, ductile welds.

(b) Welding must be performed by welders who are qualified under §§ 192.227 and 192.229 for the welding procedure to be used.

§ 192.225 Qualification of welding procedures.

(a) Each welding procedure must be qualified under either 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.

(b) When a welding procedure is being qualified under section IX of the ASME Boiler and Pressure Vessel Code, the following steels are considered to fall within the P-Number 1 grouping for the purpose of the essential variables and do not require separate qualification of welding procedures:

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

(2) Carbon steels that have a carbon equivalent ($C + \frac{1}{4} Mn$) of 0.65 percent (ladle analysis) or less.

(3) Alloy steels with weldability characteristics that have been shown to be similar to the carbon steels listed in subparagraphs (1) and (2) of this paragraph.

Alloy steels and carbon steels that are not covered by subparagraph (1), (2), or (3) of this paragraph require separate qualification of procedures for each individual pipe specification in accordance with sections VIII and IX of the ASME Boiler and Pressure Vessel Code.

(c) Each welding procedure must be recorded in detail during the qualifying tests. This record must be retained and followed whenever the procedure is used.

§ 192.227 Qualification of welders.

(a) Except as provided in paragraph (c) of this section, each welder must be qualified in accordance with one of the following:

(1) Section IX of the ASME Boiler and Pressure Vessel Code.

(2) Section 3 of API Standard 1104.

(b) When a welder is being qualified under section IX of the ASME Boiler and Pressure Vessel Code, the following steels are considered to fall within the P-Number 1 grouping for the purpose of the essential variables and do not require separate qualification:

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

(2) Carbon steels that have a carbon equivalent ($C + \frac{1}{4} Mn$) of 0.65 percent (ladle analysis) or less.

(3) Alloy steels with weldability characteristics that have been shown to be similar to the carbon steels listed in subparagraphs (1) and (2) of this paragraph.

Alloy steels and carbon steels that are not covered by subparagraph (1), (2),

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or (3) of this paragraph require separate qualification of welders for each individual pipe specification in accordance with sections VIII and IX of the ASME Boiler and Pressure Vessel Code.

(c) A welder may qualify to perform welding on pipe to be operated at a pressure that produces a hoop stress of less than 20 percent of SMYS by performing an acceptable test weld, for the process to be used, under the test set forth in section I of Appendix C to this part. A welder who makes welded service line connections to mains must also perform an acceptable test weld under section II of Appendix C to this part as a part of his qualifying test. After initial qualification, a welder may not perform welding unless—

(1) Within the preceding 12 calendar months, he has requalified; or

(2) Within the preceding 6 calendar months he has had—

(i) A production weld cut out, tested and found acceptable in accordance with the qualifying test; or

(ii) For welders who work only on service lines 2 inches or smaller in diameter, two sample welds tested and found acceptable in accordance with the test in section III of Appendix C to this part.

§ 192.229 Limitations on welders.

(a) No welder whose qualification is based on nondestructive testing may weld compressor station pipe and components.

(b) No welder may weld with a particular welding process unless, within the preceding 6 calendar months, he has engaged in welding with that process.

(c) No welder who is qualified under § 192.227(a) may weld unless, within the preceding 6 calendar months, he has had at least one weld tested and found acceptable under either section 3 or 6 of API Standards 1104.

§ 192.231 Protection from weather.

The welding operation must be protected from weather conditions that would impair the quality of the completed weld.

§ 192.233 Miter joints.

(a) A miter joint on steel pipe to be operated at a pressure that produces a hoop stress of 30 percent or more of SMYS may not deflect the pipe more than 3°.

(b) A miter joint on steel pipe to be operated at a pressure that produces a hoop stress of less than 30 percent, but

more than 10 percent, of SMYS may not deflect the pipe more than 12½° and must be a distance equal to one pipe diameter or more away from any other miter joint, as measured from the crotch of each joint.

(c) A miter joint on steel pipe to be operated at a pressure that produces a hoop stress of 10 percent or less of SMYS may not deflect the pipe more than 90°.

§ 192.235 Preparation for welding.

Before beginning any welding, the welding surfaces must be clean and free of any material that may be detrimental to the weld, and the pipe or component must be aligned to provide the most favorable condition for depositing the root bead. This alignment must be preserved while the root bead is being deposited.

§ 192.237 Preheating.

(a) Carbon steel that has a carbon content in excess of 0.32 percent (ladle analysis) or a carbon equivalent ($C + \frac{1}{4} Mn$) in excess of 0.65 percent (ladle analysis) must be preheated for welding.

(b) Carbon steel that has a lower carbon content or carbon equivalent than the steels covered by paragraph (a) of this section must be preheated for welding when preheating will alleviate existing conditions that would limit the welding technique or tend to adversely affect the quality of the weld.

(c) When steel materials with different preheat temperatures are being preheated for welding, the higher temperature must be used.

(d) Preheat temperature must be monitored to ensure that the required preheat temperature is reached before, and maintained during, the welding operation.

§ 192.239 Stress relieving.

(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 (ladle analysis) or a carbon equivalent ($C + \frac{1}{4} Mn$) in excess of 0.65 percent (ladle 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 (ladle analysis) or a carbon equivalent ($C + \frac{1}{4} Mn$) of less than 0.65 percent (ladle analysis) must

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be thermally stress relieved when conditions exist which cool the weld at a rate detrimental to the quality of the weld.

(c) Except as provided in paragraph (f) of this section, each weld on carbon steel pipe with a wall thickness of more than $1\frac{1}{4}$ inches must be stress relieved.

(d) When a weld connects pipe or components that are of different thickness, the wall thickness to be used in determining whether stress relieving is required under this section is—

(1) In the case of pipe connections, the thicker of the two pipes joined; or

(2) In the case of branch connections, slip-on flanges, or socket weld fittings, the thickness of the pipe run or header.

(e) Each weld of different materials must be stress relieved, if either material requires stress relieving under this section.

(f) Notwithstanding paragraphs (a), (b), and (c) of this section, stress relieving is not required for the following:

(1) A fillet or groove weld one-half inch, or less, in size (leg) that attaches a connection 2 inches, or less, in diameter; or

(2) A fillet or groove weld three-eighths inch, or less, in groove size that attaches a supporting member or other nonpressure attachment.

(g) Stress relieving required by this section must be performed at a temperature of at least $1,100^{\circ}\text{F}$. for carbon steels and at least $1,200^{\circ}\text{F}$. for ferritic alloy steels. When stress relieving a weld between steel materials with different stress relieving temperatures, the higher temperature must be used.

(h) When stress relieving, the temperature must be monitored to ensure that a uniform temperature is maintained and that the proper stress relieving cycle is accomplished.

§ 192.241 Inspection and test of welds.

(a) Visual inspection of welding must be conducted to insure that—

(1) The welding is performed in accordance with the welding procedure; and

(2) The weld is acceptable under paragraph (c) of this section.

(b) The welds on a pipeline to be operated at a pressure that produces a hoop stress of 20 percent or more of SMYS must be nondestructively tested in accordance with § 192.243, except that welds that are visually inspected and approved by a qualified welding inspector need not be nondestructively tested if—

(1) The pipe has a nominal diameter of less than 6 inches; or

(2) The pipeline is to be operated at a pressure that produces a hoop stress of less than 40 percent of SMYS and the welds are so limited in number that nondestructive testing is impractical.

(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.

§ 192.243 Nondestructive testing.

(a) Nondestructive testing of welds must be performed by any process, other than trepanning, that will clearly indicate defects that may affect the integrity of the weld.

(b) Nondestructive testing of welds must be performed—

(1) In accordance with written procedures; and

(2) By persons who have been trained and qualified in the established procedures and with the equipment employed in testing.

(c) Procedures must be established for the proper interpretation of each nondestructive test of a weld to ensure the acceptability of the weld under § 192.241(c).

(d) When nondestructive testing is required under § 192.241(b), the following percentages of each day's field butt welds, selected at random by the operator, must be nondestructively tested over their entire circumference:

(1) In Class 1 locations, at least 10 percent.

(2) In Class 2 locations, at least 15 percent.

(3) In Classes 3 and 4 locations and at crossings of major or navigable rivers, 100 percent if practicable, but not less than 90 percent.

(4) Within railroad or public highway rights-of-way, including tunnels, bridges and overhead road crossings, and at pipeline tie-ins, 100 percent.

(e) Except for a welder whose work is isolated from the principal welding activity, a sample of each welder's work for each day must be nondestructively tested, when nondestructive testing is required under § 192.241(b).

(f) When nondestructive testing is required under § 192.241(b), each operator must retain, for the life of the pipeline, a record showing by milepost, engineering station, or by geographic feature, the number of girth welds made,

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the number nondestructively tested, the number rejected, and the disposition of the rejects.

§ 192.245 Repair or removal of defects.

(a) Each weld that is unacceptable under § 192.241(c) must be removed or repaired. 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.

(b) Each weld that is repaired must have the defect removed down to clean metal and the segment to be repaired must be preheated. After repair, the segment of the weld that was repaired must be inspected to insure its acceptability. If the repair is not acceptable, the weld must be removed.

Subpart F—Joining of Materials Other Than by Welding

§ 192.271 Scope.

(a) This subpart prescribes minimum requirements for joining materials in pipelines, other than by welding.

(b) This subpart does not apply to joining during the manufacture of pipe or pipeline components.

§ 192.273 General.

(a) The pipeline must be designed and installed so that each joint will sustain the longitudinal pullout or thrust forces caused by contraction or expansion of the piping or by anticipated external or internal loading.

(b) Each joint must be made in accordance with written procedures that have been proven by test or experience to produce strong gastight joints.

(c) Each joint must be inspected to insure compliance with this subpart.

§ 192.275 Cast iron pipe.

(a) Each caulked bell and spigot joint in cast iron pipe must be sealed with mechanical leak clamps.

(b) Each mechanical joint in cast iron pipe must have a gasket made of a resilient material as the sealing medium. Each gasket must be suitably confined and retained under compression by a separate gland or follower ring.

(c) Cast iron pipe may not be joined by threaded joints.

(d) Cast iron pipe may not be joined by brazing.

(e) Each flange on a flanged joint in cast iron pipe must conform in dimen-

sions and drilling to ANSI Standard B16.1 and be cast integrally with the pipe, valve, or fitting.

§ 192.277 Ductile iron pipe.

(a) Each mechanical joint in ductile iron pipe must conform to ANSI Standard A21.52 and ANSI Standard A21.11.

(b) Ductile iron pipe may not be joined by threaded joints.

(c) Ductile iron pipe may not be joined by brazing.

§ 192.279 Copper pipe.

Copper pipe may not be threaded, except that copper pipe used for joining screw fittings or valves may be threaded if the wall thickness is equivalent to the comparable size of standard wall pipe, as defined in ANSI Standard B36.10.

§ 192.281 Plastic pipe.

(a) *General.* Each plastic pipe joint must be made in accordance with written procedures that have been proven by destructive burst test to produce joints at least as strong as the pipe being joined. A plastic pipe joint that is joined by solvent cement, adhesive, or heat fusion may not be disturbed until it has properly set. Plastic pipe may not be joined by a threaded joint or miter joint.

(b) *Solvent cement joints.* Each solvent cement joint on plastic pipe must comply with the following:

(1) The mating surfaces of the joint must be clean, dry, and free of material which might be detrimental to the joint.

(2) The solvent cement must conform to ASTM Specification D 2513.

(3) The safety requirements of Appendix A of ASTM Specification D 2513 must be met.

(4) The joint may not be heated to accelerate the setting of the cement.

(c) *Heat-fusion joints.* Each heat-fusion joint on plastic pipe must comply with the following:

(1) A butt heat-fusion joint must be joined by a device that holds the heater element square to the ends of the piping, compresses the heated ends together, and holds the pipe in proper alignment while the plastic hardens.

(2) A socket heat-fusion joint must be joined by a device that heats the mating surfaces of the joint uniformly and simultaneously to essentially the same temperature.

(3) Heat may not be applied with a torch or other open flame.

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(d) *Adhesive joints.* Each adhesive joint on plastic pipe must comply with the following:

(1) The adhesive must conform to ASTM Specification D 2517.

(2) The materials and adhesive must be compatible with each other.

(e) *Mechanical joints.* Each compression type mechanical joint on plastic pipe must comply with the following:

(1) The gasket material in the coupling must be compatible with the plastic.

(2) A rigid internal tubular stiffener, other than a split tubular stiffener, must be used in conjunction with the coupling.

Subpart G—General Construction Requirements for Transmission Lines and Mains

§ 192.301 Scope.

This subpart prescribes minimum requirements for constructing transmission lines and mains.

§ 192.303 Compliance with specifications or standards.

Each transmission line or main must be constructed in accordance with comprehensive written specifications or standards that are consistent with this part.

§ 192.305 Inspection: general.

Each transmission line or main must be inspected to ensure that it is constructed in accordance with this part.

§ 192.307 Inspection of materials.

Each length of pipe and each other component must be visually inspected at the site of installation to ensure that it has not sustained any visually determinable damage that could impair its serviceability.

§ 192.309 Repair of steel pipe.

(a) Each imperfection or damage that impairs the serviceability of a length of steel pipe must be repaired or removed. If a repair is made by grinding, the remaining wall thickness must at least be equal to either:

(1) The minimum thickness required by the tolerances in the specification to which the pipe was manufactured; or

(2) The nominal wall thickness required for the design pressure of the pipeline.

(b) Each of the following dents must be removed from steel pipe to be operated

at a pressure that produces a hoop stress of 20 percent, or more, of SMYS:

(1) A dent that contains a stress concentrator such as a scratch, gouge, groove, or arc burn.

(2) A dent that affects the longitudinal weld or a circumferential weld.

(3) In pipe to be operated at a pressure that produces a hoop stress of 40 percent or more of SMYS, a dent that has a depth of—

(i) More than one-quarter inch in pipe 12½ inches or less in outer diameter; or

(ii) More than 2 percent of the nominal pipe diameter in pipe over 12½ inches in outer diameter.

For the purpose of this section a "dent" is a depression that produces a gross disturbance in the curvature of the pipe wall without reducing the pipe-wall thickness. The depth of a dent is measured as the gap between the lowest point of the dent and a prolongation of the original contour of the pipe.

(c) Each arc burn on steel pipe to be operated at a pressure that produces a hoop stress of 40 percent, or more, of SMYS must be repaired or removed. If a repair is made by grinding, the arc burn must be completely removed and the remaining wall thickness must be at least equal to either:

(1) The minimum wall thickness required by the tolerances in the specification to which the pipe was manufactured; or

(2) The nominal wall thickness required for the design pressure of the pipeline.

(d) A gouge, groove, arc burn, or dent may not be repaired by insert patching or by pounding out.

(e) Each gouge, groove, arc burn, or dent that is removed from a length of pipe must be removed by cutting out the damaged portion as a cylinder.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.311 Repair of plastic pipe.

Each imperfection or damage that would impair the serviceability of plastic pipe must be repaired by a patching saddle or removed.

§ 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 may not impair the serviceability of the pipe.

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

(3) A bend on pipe that is 12 inches, or more, in nominal diameter must not deflect the pipe more than $1\frac{1}{2}^\circ$ in any length of pipe equal to the diameter.

(4) For pipe more than 4 inches in nominal diameter, the difference between the maximum and minimum diameter at a bend may not be more than $2\frac{1}{2}$ percent of the nominal diameter.

(b) Each circumferential weld of steel pipe that is subjected to stress during bending must be nondestructively tested.

(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.

(d) Each bend, other than a wrinkle bend made in accordance with § 192.315, must have a smooth contour and be free of mechanical damage.

§ 192.315 Wrinkle bends in steel pipe.

(a) A wrinkle bend may not be made on steel pipe to be operated at a pressure that produces a hoop stress of 30 percent, or more, of SMYS.

(b) Each wrinkle bend on steel pipe must comply with the following:

(1) The bend must not have any sharp kinks.

(2) When measured along the crotch of the bend, the wrinkles must be a distance of at least one pipe diameter.

(3) On pipe 16 inches or larger in diameter, the bend may not have a deflection of more than $1\frac{1}{2}^\circ$ for each wrinkle.

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

§ 192.317 Protection from hazards.

(a) Each transmission line or main must be protected from washouts, floods, unstable soil, landslides, or other hazards that may cause the pipe to move or to sustain abnormal loads.

(b) Each transmission line or main that is constructed above ground must be protected from accidental damage by vehicular traffic or other similar causes, either by being placed at a safe distance from the traffic or by installing barricades.

§ 192.319 Installation of pipe in a ditch.

(a) When installed in a ditch, each transmission line that is to be operated at a pressure producing a hoop stress of 20 percent or more of SMYS must be installed so that the pipe fits the ditch so as to minimize stresses and protect the pipe coating from damage.

(b) Each ditch for a transmission line or main must be backfilled in a manner that—

(1) Provides firm support under the pipe; and

(2) Prevents damage to the pipe and pipe coating from equipment or from the backfill material.

§ 192.321 Installation of plastic pipe.

(a) Plastic pipe must be installed below ground level.

(b) Plastic pipe that is installed in a vault or any other below grade enclosure must be completely encased in gas-tight metal pipe and fittings that are adequately protected from corrosion.

(c) Plastic pipe must be installed so as to minimize shear or tensile stresses.

(d) Thermoplastic pipe that is not encased must have a minimum wall thickness of 0.090 inches, except that pipe with an outside diameter of 0.875 inches or less may have a minimum wall thickness of 0.062 inches.

(e) Plastic pipe that is not encased must have an electrically conductive wire or other means of locating the pipe while it is underground.

(f) Plastic pipe that is being encased must be inserted into the casing pipe in a manner that will protect the plastic. The leading end of the plastic must be closed before insertion.

§ 192.323 Casing.

Each casing used on a transmission line or main under a railroad or highway must comply with the following:

(a) The casing must be designed to withstand the superimposed loads.

(b) If there is a possibility of water entering the casing, the ends must be sealed.

(c) If the ends of an unvented casing are sealed and the sealing is strong enough to retain the maximum allowable operating pressure of the pipe, the casing must be designed to hold this pressure at a stress level of not more than 72 percent of SMYS.

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(d) If vents are installed on a casing, the vents must be protected from the weather to prevent water from entering the casing.

§ 192.325 Underground clearance.

(a) Each transmission line must be installed with at least 12 inches of clearance from any other underground structure not associated with the transmission line. If this clearance cannot be attained, the transmission line must be protected from damage that might result from the proximity of the other structure.

(b) Each main must be installed with enough clearance from any other underground structure to allow proper maintenance and to protect against damage that might result from proximity to other structures.

(c) In addition to meeting the requirements of paragraph (a) or (b) of this section, each plastic transmission line or main must be installed with sufficient clearance, or must be insulated, from any source of heat so as to prevent the heat from impairing the serviceability of the pipe.

(d) Each pipe-type or bottle-type holder must be installed with a minimum clearance from any other holder as prescribed in § 192.175(b).

§ 192.327 Cover.

(a) Except as provided in paragraph (c) of this section, each buried transmission line must be installed with a minimum cover as follows:

Location	Normal soil	Consolidated rock
	<i>Inches</i>	<i>Inches</i>
Class 1 locations.....	30	18
Class 2, 3, and 4 locations.....	36	24
Drainage ditches of public roads and railroad crossings.....	36	24

(b) Except as provided in paragraphs (c) and (d) of this section, each buried main must be installed with at least 24 inches of cover.

(c) Where an underground structure prevents the installation of a transmission line or main with the minimum cover, the transmission line or main may be installed with less cover if it is provided with additional protection to withstand anticipated external loads.

(d) A main may be installed with less than 24 inches of cover if the law of the State or municipality—

(1) Establishes a minimum cover of less than 24 inches;

(2) Requires that mains be installed in a common trench with other utility lines; and

(3) Provides adequately for prevention of damage to the pipe by external forces.

Subpart H—Customer Meters, Service Regulators, and Service Lines

§ 192.351 Scope.

This subpart prescribes minimum requirements for installing customer meters, service regulators, service lines, service line valves, and service line connections to mains.

§ 192.353 Customer meters and regulators: location.

(a) Each meter and service regulator, whether inside or outside of a building, must be installed in a readily accessible location and be protected from corrosion and other damage. However, the upstream regulator in a series may be buried.

(b) Each service regulator installed within a building must be located as near as practical to the point of service line entrance.

(c) Each meter installed within a building must be located in a ventilated place and not less than 3 feet from any source of ignition or any source of heat which might damage the meter.

(d) Where feasible, the upstream regulator in a series must be located outside the building, unless it is located in a separate metering or regulating building.

§ 192.355 Customer meters and regulators: protection from damage.

(a) *Protection from vacuum or back pressure.* If the customer's equipment might create either a vacuum or a back pressure, a device must be installed to protect the system.

(b) *Service regulator vents and relief vents.* The outside terminal of each service regulator vent and relief vent must—

(1) Be rain and insect resistant;

(2) Be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building; and

(3) Be protected from damage caused by submergence in areas where flooding may occur.

(c) *Pits and vaults.* Each pit or vault that houses a customer meter or regula-

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tor at a place where vehicular traffic is anticipated, must be able to support that traffic.

§ 192.357 Customer meters and regulators: installation.

(a) Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter.

(b) When close all-thread nipples are used, the wall thickness remaining after the threads are cut must meet the minimum wall thickness requirements of this part.

(c) Connections made of lead or other easily damaged material may not be used in the installation of meters or regulators.

(d) Each regulator that might release gas in its operation must be vented to the outside atmosphere.

§ 192.359 Customer meter installations: operating pressure.

(a) A meter may not be used at a pressure that is more than 67 percent of the manufacturer's shell test pressure.

(b) Each newly installed meter manufactured after November 12, 1970, must have been tested to a minimum of 10 p.s.i.g.

(c) A rebuilt or repaired tinned steel case meter may not be used at a pressure that is more than 50 percent of the pressure used to test the meter after rebuilding or repairing.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.361 Service lines: installation.

(a) *Depth.* Each buried service line must be installed with at least 12 inches of cover in private property and at least 18 inches of cover in streets and roads. However, where an underground structure prevents installation at those depths, the service line must be able to withstand any anticipated external load.

(b) *Support and backfill.* Each service line must be properly supported on undisturbed or well-compacted soil, and material used for backfill must be free of materials that could damage the pipe or its coating.

(c) *Grading for drainage.* Where condensate in the gas might cause interruption in the gas supply to the customer, the service line must be graded so as to

drain into the main or into drips at the low points in the service line.

(d) *Protection against piping strain and external loading.* Each service line must be installed so as to minimize anticipated piping strain and external loading.

(e) *Installation of service lines into buildings.* Each underground service line installed below grade through the outer foundation wall of a building must—

(1) In the case of a metal service line, be protected against corrosion;

(2) In the case of a plastic service line, be protected from shearing action and backfill settlement; and

(3) Be sealed at the foundation wall to prevent leakage into the building.

(f) *Installation of service lines under buildings.* Where an underground service line is installed under a building—

(1) It must be encased in a gas-tight conduit;

(2) The conduit and the service line must, if the service line supplies the building it underlies, extend into a normally usable and accessible part of the building; and

(3) The space between the conduit and the service line must be sealed to prevent gas leakage into the building and, if the conduit is sealed at both ends, a vent line from the annular space must extend to a point where gas would not be a hazard, and extend above grade, terminating in a rain and insect resistant fitting.

§ 192.363 Service lines: valve requirements.

(a) Each service line must have a service-line valve that meets the applicable requirements of Subparts B and D of this part. A valve incorporated in a meter bar, that allows the meter to be bypassed, may not be used as a service-line valve.

(b) A soft seat service line valve may not be used if its ability to control the flow of gas could be adversely affected by exposure to anticipated heat.

(c) Each service-line valve on a high-pressure service line, installed above ground or in an area where the blowing of gas would be hazardous, must be designed and constructed to minimize the possibility of the removal of the core of the valve with other than specialized tools.

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§ 192.365 Service lines: location of valves.

(a) *Relation to regulator or meter.* Each service-line valve must be installed upstream of the regulator or, if there is no regulator, upstream of the meter.

(b) *Outside valves.* Each service line must have a shut-off valve in a readily accessible location that, if feasible, is outside of the building.

(c) *Underground valves.* Each underground service-line valve must be located in a covered durable curb box or standpipe that allows ready operation of the valve and is supported independently of the service lines.

§ 192.367 Service lines: general requirements for connections to main piping.

(a) *Location.* Each service-line connection to a main must be located at the top of the main or, if that is not practical, at the side of the main, unless a suitable protective device is installed to minimize the possibility of dust and moisture being carried from the main into the service line.

(b) *Compression-type connection to main.* Each compression-type service line to main connection must—

(1) Be designed and installed to effectively sustain the longitudinal pull-out or thrust forces caused by contraction or expansion of the piping, or by anticipated external or internal loading; and

(2) If gaskets are used in connecting the service line to the main connection fitting, have gaskets that are compatible with the kind of gas in the system.

§ 192.369 Service lines: connections to cast iron or ductile iron mains.

(a) Each service line connected to a cast iron or ductile iron main must be connected by a mechanical clamp, by drilling and tapping the main, or by another method meeting the requirements of § 192.273.

(b) If a threaded tap is being inserted, the requirements of § 192.151 (b) and (c) must also be met.

§ 192.371 Service lines: steel.

Each steel service line to be operated at less than 100 p.s.i.g. must be constructed of pipe designed for a minimum of 100 p.s.i.g.

[Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.373 Service lines: cast iron and ductile iron.

(a) Cast or ductile iron pipe less than 6 inches in diameter may not be installed for service lines.

(b) If cast iron pipe or ductile iron pipe is installed for use as a service line, the part of the service line which extends through the building wall must be of steel pipe.

(c) A cast iron or ductile iron service line may not be installed in unstable soil or under a building.

§ 192.375 Service lines: plastic.

(a) Each plastic service line outside a building must be installed below ground level, except that it may terminate above ground and outside the building, if—

(1) The above ground part of the plastic service line is protected against deterioration and external damage; and

(2) The plastic service line is not used to support external loads.

(b) Each plastic service line inside a building must be protected against external damage.

§ 192.377 Service lines: copper.

Each copper service line installed within a building must be protected against external damage.

Subpart I—[Reserved]

Subpart J—Test Requirements

§ 192.501 Scope.

This subpart prescribes minimum leak-test and strength-test requirements for pipelines.

§ 192.503 General requirements.

(a) No person may operate a new segment of pipeline, or return to service a segment of pipeline that has been relocated or replaced, until—

(1) It has been tested in accordance with this subpart to substantiate the proposed maximum allowable operating pressure; and

(2) Each potentially hazardous leak has been located and eliminated.

(b) The test medium must be liquid, air, natural gas, or inert gas that is—

(1) Compatible with the material of which the pipeline is constructed;

(2) Relatively free of sedimentary materials; and

(3) Except for natural gas, nonflammable.

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(c) Except as provided in § 192.505 (a), if air, natural gas, or inert gas is used as the test medium, the following maximum hoop stress limitations apply:

Class location	Maximum hoop stress allowed as percentage of SMYS	
	Natural gas	Air or inert gas
1.....	80	80
2.....	30	75
3.....	30	70
4.....	30	50

(d) Each weld used to tie-in a test segment of pipeline is excepted from the test requirements of this subpart.

§ 192.505 Strength test requirements for steel pipeline to operate at a hoop stress of 30 percent or more of SMYS.

(a) Except for service lines, each segment of a steel pipeline that is to operate at a hoop stress of 30 percent or more of SMYS must be strength tested in accordance with this section to substantiate the proposed maximum allowable operating pressure. In addition, in a Class 1 or Class 2 location, if there is a building intended for human occupancy within 300 feet of a pipeline, a hydrostatic test must be conducted to a test pressure of at least 125 percent of maximum operating pressure on that segment of the pipeline within 300 feet of such a building, but in no event may the test section be less than 600 feet unless the length of the newly installed or relocated pipe is less than 600 feet. However, if the buildings are evacuated while the hoop stress exceeds 50 percent of SMYS, air or inert gas may be used as the test medium.

(b) In a Class 1 or Class 2 location, each compressor station, regulator station, and measuring station, must be tested to at least Class 3 location test requirements.

(c) Except as provided in paragraph (e) of this section, the strength test must be conducted by maintaining the pressure at or above the test pressure for at least 8 hours.

(d) If a component other than pipe is the only item being replaced or added to a pipeline, a strength test after installation is not required, if the manufacturer of the component certifies that—

(1) The component was tested to at least the pressure required for the pipeline to which it is being added; or

(2) The component was manufactured under a quality control system that en-

sures that each item manufactured is at least equal in strength to a prototype and that the prototype was tested to at least the pressure required for the pipeline to which it is being added.

(e) For fabricated units and short sections of pipe, for which a post installation test is impractical, a preinstallation strength test must be conducted by maintaining the pressure at or above the test pressure for at least 4 hours.

§ 192.507 Test requirements for pipelines to operate at a hoop stress less than 30 percent of SMYS and above 100 p.s.i.g.

Except for service lines and plastic pipelines, each segment of a pipeline that is to be operated at a hoop stress less than 30 percent of SMYS and above 100 p.s.i.g. must be tested in accordance with the following:

(a) The pipeline operator must use a test procedure that will ensure discovery of all potentially hazardous leaks in the segment being tested.

(b) If, during the test, the segment is to be stressed to 20 percent or more of SMYS and natural gas, inert gas, or air is the test medium—

(1) A leak test must be made at a pressure between 100 p.s.i.g. and the pressure required to produce a hoop stress of 20 percent of SMYS; or

(2) The line must be walked to check for leaks while the hoop stress is held at approximately 20 percent of SMYS.

(c) The pressure must be maintained at or above the test pressure for at least 1 hour.

§ 192.509 Test requirements for pipelines to operate at or below 100 p.s.i.g.

Except for service lines and plastic pipelines, each segment of a pipeline that is to be operated at or below 100 p.s.i.g. must be leak tested in accordance with the following:

(a) The test procedure used must ensure discovery of all potentially hazardous leaks in the segment being tested.

(b) Each main that is to be operated at less than 1 p.s.i.g. must be tested to at least 10 p.s.i.g. and each main to be operated at or above 1 p.s.i.g. must be tested to at least 90 p.s.i.g.

§ 192.511 Test requirements for service lines.

(a) Each segment of a service line (other than plastic) must be leak tested in accordance with this section before

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being placed in service. If feasible, the service-line connection to the main must be included in the test; if not feasible, it must be given a leakage test at the operating pressure when placed in service.

(b) Each segment of a service line (other than plastic) intended to be operated at a pressure of at least 1 p.s.i.g. but not more than 40 p.s.i.g. must be given a leak test at a pressure of not less than 50 p.s.i.g.

(c) Each segment of a service line (other than plastic) intended to be operated at pressures of more than 40 p.s.i.g. must be tested to at least 90 p.s.i.g., except that each segment of a steel service line stressed to 20 percent or more of SMYS must be tested in accordance with § 192.507 of this subpart.

§ 192.513 Test requirements for plastic pipelines.

(a) Each segment of a plastic pipeline must be tested in accordance with this section.

(b) The test procedure must insure discovery of all potentially hazardous leaks in the segment being tested.

(c) The test pressure must be at least 150 percent of the maximum operating pressure or 50 p.s.i.g., whichever is greater. However, the maximum test pressure may not be more than three times the design pressure of the pipe.

(d) The temperature of thermoplastic material must not be more than 100° F. during the test.

§ 192.515 Environmental protection and safety requirements.

(a) In conducting tests under this subpart, each operator shall insure that every reasonable precaution is taken to protect its employees and the general public during the testing. Whenever the hoop stress of the segment of the pipeline being tested will exceed 50 percent of SMYS, the operator shall take all practicable steps to keep persons not working on the testing operation outside of the testing area until the pressure is reduced to or below the proposed maximum allowable operating pressure.

(b) The operator shall insure that the test medium is disposed of in a manner that will minimize damage to the environment.

§ 192.517 Records.

Each operator shall make, and retain for the useful life of the pipeline, a rec-

ord of each test performed under §§ 192.505 and 192.507. The record must contain at least the following information:

(a) The operator's name, the name of the operator's employee responsible for making the test, and the name of any test company used.

(b) Test medium used.

(c) Test pressure.

(d) Test duration.

(e) Pressure recording charts, or other record of pressure readings.

(f) Elevation variations, whenever significant for the particular test.

(g) Leaks and failures noted and their disposition.

Subpart K—Uprating

§ 192.551 Scope.

This subpart prescribes minimum requirements for increasing maximum allowable operating pressures (uprating) for pipelines.

§ 192.553 General requirements.

(a) *Pressure increases.* Whenever the requirements of this subpart require that an increase in operating pressure be made in increments, the pressure must be increased gradually, at a rate that can be controlled, and in accordance with the following:

(1) At the end of each incremental increase, the pressure must be held constant while the entire segment of pipeline that is affected is checked for leaks.

(2) Each leak detected must be repaired before a further pressure increase is made, except that a leak determined not to be potentially hazardous need not be repaired, if it is monitored during the pressure increase and it does not become potentially hazardous.

(b) *Records.* Each operator who uprates a segment of pipeline shall retain for the life of the segment a record of each investigation required by this subpart, of all work performed, and of each pressure test conducted, in connection with the uprating.

(c) *Written plan.* Each operator who uprates a segment of pipeline shall establish a written procedure that will ensure that each applicable requirement of this subpart is complied with.

(d) *Limitation on increase in maximum allowable operating pressure.* Except as provided in § 192.555(c), a new maximum allowable operating pressure established under this subpart may not

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exceed the maximum that would be allowed under this part for a new segment of pipeline constructed of the same materials in the same location.

§ 192.555 Upgrading to a pressure that will produce a hoop stress of 30 percent or more of SMYS in steel pipelines.

(a) Unless the requirements of this section have been met, no person may subject any segment of a steel pipeline to an operating pressure that will produce a hoop stress of 30 percent or more of SMYS and that is above the established maximum allowable operating pressure.

(b) Before increasing operating pressure above the previously established maximum allowable operating pressure the operator shall—

(1) Review the design, operating, and maintenance history and previous testing of the segment of pipeline and determine whether the proposed increase is safe and consistent with the requirements of this part; and

(2) Make any repairs, replacements, or alterations in the segment of pipeline that are necessary for safe operation at the increased pressure.

(c) After complying with paragraph (b) of this section, an operator may increase the maximum allowable operating pressure of a segment of pipeline constructed before September 12, 1970, to the highest pressure that is permitted under § 192.619, using as test pressure the highest pressure to which the segment of pipeline was previously subjected (either in a strength test or in actual operation).

(d) After complying with paragraph (b) of this section, an operator that does not qualify under paragraph (c) of this section may increase the previously established maximum allowable operating pressure if at least one of the following requirements is met:

(1) The segment of pipeline is successfully tested in accordance with the requirements of this part for a new line of the same material in the same location.

(2) An increased maximum allowable operating pressure may be established for a segment of pipeline in a Class 1 location if the line has not previously been tested, and if—

(i) It is impractical to test it in accordance with the requirements of this part;

(ii) The new maximum operating pressure does not exceed 80 percent of that allowed for a new line of the same design in the same location; and

(iii) The operator determines that the new maximum allowable operating pressure is consistent with the condition of the segment of pipeline and the design requirements of this part.

(e) Where a segment of pipeline is upgraded in accordance with paragraph (c) or (d) (2) of this section, the increase in pressure must be made in increments that are equal to—

(1) 10 percent of the pressure before the upgrading; or

(2) 25 percent of the total pressure increase,

whichever produces the fewer number of increments.

§ 192.557 Upgrading: steel pipelines to a pressure that will produce a hoop stress less than 30 percent of SMYS; plastic, cast iron, and ductile iron pipelines.

(a) Unless the requirements of this section have been met, no person may subject—

(1) A segment of steel pipeline to an operating pressure that will produce a hoop stress less than 30 percent of SMYS and that is above the previously established maximum allowable operating pressure; or

(2) A plastic, cast iron, or ductile iron pipeline segment to an operating pressure that is above the previously established maximum allowable operating pressure.

(b) Before increasing operating pressure above the previously established maximum allowable operating pressure, the operator shall—

(1) Review the design, operating, and maintenance history of the segment of pipeline;

(2) Make a leakage survey (if it has been more than 1 year since the last survey) and repair any leaks that are found, except that a leak determined not to be potentially hazardous need not be repaired, if it is monitored during the pressure increase and it does not become potentially hazardous;

(3) Make any repairs, replacements, or alterations in the segment of pipeline that are necessary for safe operation at the increased pressure;

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(4) Reinforce or anchor offsets, bends and dead ends in pipe joined by compression couplings or bell and spigot joints to prevent failure of the pipe joint, if the offset, bend, or dead end is exposed in an excavation;

(5) Isolate the segment of pipeline in which the pressure is to be increased from any adjacent segment that will continue to be operated at a lower pressure; and

(6) If the pressure in mains or service lines, or both, is to be higher than the pressure delivered to the customer, install a service regulator on each service line and test each regulator to determine that it is functioning. Pressure may be increased as necessary to test each regulator, after a regulator has been installed on each pipeline subject to the increased pressure.

(c) After complying with paragraph (b) of this section, the increase in maximum allowable operating pressure must be made in increments that are equal to 10 p.s.i.g. or 25 percent of the total pressure increase, whichever produces the fewer number of increments. Whenever the requirements of paragraph (b) (6) of this section apply, there must be at least two approximately equal incremental increases.

(d) If records for cast iron or ductile iron pipeline facilities are not complete enough to ascertain compliance with § 192.117 or § 192.119, as applicable, the following procedures must be followed:

(1) If the original laying conditions cannot be ascertained, the operator shall assume, when applying the design formulas of ANSI A21.1, that cast iron pipe was supported on blocks with tamped backfill and, when applying the design formulas of ANSI A21.50, that ductile iron pipe was laid without blocks with tamped backfill.

(2) Unless the actual maximum cover depth is known, the operator shall measure the actual cover in at least three places where the cover is most likely to be greatest and shall use the greatest cover measured.

(3) Unless the actual nominal wall thickness is known, the operator shall determine the wall thickness by cutting and measuring coupons from at least three separate pipe lengths. The coupons must be cut from pipe lengths in areas where the cover depth is most likely to be the greatest. The average of all

measurements taken must be increased by the allowance indicated in the following table:

Pipe size (inches)	Allowance (inches)		
	Cast iron pipe		Ductile iron pipe
	Pit cast pipe	Centrifugally cast pipe	
2-8	0.075	0.065	0.065
10-12	0.08	0.07	0.07
14-24	0.08	0.08	0.075
30-42	0.09	0.09	0.075
48	0.09	0.09	0.08
54-60	0.09		

NOTE.—The nominal wall thickness of the cast iron is the standard thickness listed in table 10 or table 11, as applicable, of ANSI A21.1 nearest the value obtained under this subparagraph. The nominal wall thickness of ductile iron pipe is the standard thickness listed in table 6 of ANSI A21.50 nearest the value obtained under this subparagraph.

(4) For cast iron pipe, unless the pipe manufacturing process is known, the operator shall assume that the pipe is pit case pipe with a bursting tensile strength of 11,000 p.s.i. and a modulus of rupture of 31,000 p.s.i.

Subpart L—Operations

§ 192.601 Scope.

This subpart prescribes minimum requirements for the operation of pipeline facilities.

§ 192.603 General provisions.

(a) No person may operate a segment of pipeline unless it is operated in accordance with this subpart.

(b) Each operator shall establish a written operating and maintenance plan meeting the requirements of this part and keep records necessary to administer the plan.

§ 192.605 Essentials of operating and maintenance plan.

Each operator shall include the following in its operating and maintenance plan:

(a) Instructions for employees covering operating and maintenance procedures during normal operations and repairs.

(b) Items required to be included by the provisions of Subpart M of this part.

(c) Specific programs relating to facilities presenting the greatest hazard to public safety either in an emergency or because of extraordinary construction or maintenance requirements.

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(d) A program for conversion procedures, if conversion of a low-pressure distribution system to a higher pressure is contemplated.

(e) Provision for periodic inspections to ensure that operating pressures are appropriate for the class location.

§ 192.607 Initial determination of class location and confirmation or establishment of maximum allowable operating pressure.

(a) Before April 15, 1971, each operator shall complete a study to determine for each segment of pipeline with a maximum allowable operating pressure that will produce a hoop stress that is more than 40 percent of SMYS—

(1) The present class location of all such pipeline in its system; and

(2) Whether the hoop stress corresponding to the maximum allowable operating pressure for each segment of pipeline is commensurate with the present class location.

(b) If an operator finds that the hoop stress corresponding to the established maximum allowable operating pressure of a segment of pipeline is not commensurate with the present class location and the segment is in satisfactory physical condition, the operator shall confirm or revise the maximum allowable operating pressure of the affected segment of pipeline as required by § 192.611 in accordance with the following schedule:

(1) Before January 1, 1972, the operator shall complete the confirmation or revision of at least 50 percent of the affected pipelines.

(2) Before January 1, 1973, the operator shall complete the confirmation or revision of the remainder of the affected pipelines.

§ 192.609 Change in class location: required study.

Whenever an increase in population density indicates a change in class location for a segment of an existing steel pipeline operating at hoop stress that is more than 40 percent of SMYS, or indicates that the hoop stress corresponding to the established maximum allowable operating pressure for a segment of existing pipeline is not commensurate with the present class location, the operator shall immediately make a study to determine—

(a) The present class location for the segment involved.

(b) The design, construction, and testing procedures followed in the origi-

nal construction, and a comparison of these procedures with those required for the present class location by the applicable provisions of this part.

(c) The physical condition of the segment to the extent it can be ascertained from available records;

(d) The operating and maintenance history of the segment;

(e) The maximum actual operating pressure and the corresponding operating hoop stress, taking pressure gradient into account, for the segment of pipeline involved; and

(f) The actual area affected by the population density increase, and physical barriers or other factors which may limit further expansion of the more densely populated area.

§ 192.611 Change in class location: confirmation or revision of maximum allowable operating pressure.

If the hoop stress corresponding to the established maximum allowable operating pressure of a segment of pipeline is not commensurate with the present class location, and the segment is in satisfactory physical condition, the maximum allowable operating pressure of that segment of pipeline must be confirmed or revised as follows:

(a) If the segment involved has been previously tested in place to at least 90 percent of its SMYS for a period of not less than 8 hours, the maximum allowable operating pressure must be confirmed or reduced so that the corresponding hoop stress will not exceed 72 percent of SMYS of the pipe in Class 2 locations, 60 percent of SMYS in Class 3 locations, or 50 percent of SMYS in Class 4 locations.

(b) If the segment involved has not been previously tested in place as described in paragraph (a) of this section, the maximum allowable operating pressure must be reduced so that the corresponding hoop stress is not more than that allowed by this part for new segments of pipelines in the existing class location.

(c) If the segment of pipeline involved has not been qualified for operation under paragraph (a) or (b) of this section, it must be tested in accordance with the applicable requirements of Subpart J of this part, and its maximum allowable operating pressure must then be established so as to be equal to or less than the following:

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(1) The maximum allowable operating pressure after the requalification test is 0.8 times the test pressure for Class 2 locations, 0.667 times the test pressure for Class 3 locations, and 0.555 times the test pressure for Class 4 locations.

(2) The maximum allowable operating pressure confirmed or revised in accordance with this section, may not exceed the maximum allowable operating pressure established before the confirmation or revision.

(3) The corresponding hoop stress may not exceed 72 percent of the SMYS of the pipe in Class 2 locations, 60 percent of SMYS in Class 3 locations, or 50 percent of the SMYS in Class 4 locations.

(d) Confirmation or revision of the maximum allowable operating pressure of a segment of pipeline in accordance with this section does not preclude the application of §§ 192.553 and 192.555.

(e) After completing the study required by § 192.609, the operator shall confirm or revise the maximum allowable operating pressure in each segment of pipeline in accordance with this section within 1 year of the date when a change in class location has occurred.

§ 192.613 Continuing surveillance.

(a) Each operator shall have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions.

(b) If a segment of pipeline is determined to be in unsatisfactory condition but no immediate hazard exists, the operator shall initiate a program to recondition or phase out the segment involved, or, if the segment cannot be reconditioned or phased out, reduce the maximum allowable operating pressure in accordance with § 192.619 (a) and (b).

§ 192.615 Emergency plans.

Each operator shall—

(a) Have written emergency procedures;

(b) Acquaint appropriate operating and maintenance employees with the procedures;

(c) Establish liaison with appropriate public officials, including fire and police officials, with respect to the procedures; and

(d) Establish an educational program to enable customers and the general public to recognize and report a gas emergency to the appropriate officials.

§ 192.617 Investigation of failures.

Each operator shall establish procedures for analyzing accidents and failures, including the selection of samples of the failed facility or equipment for laboratory examination, where appropriate, for the purpose of determining the causes of the failure and minimizing the possibility of a recurrence.

§ 192.619 Maximum allowable operating pressure: steel or plastic pipelines.

(a) Except as provided in paragraph (c) of this section, no person may operate a segment of steel or plastic pipeline at a pressure that exceeds the lowest of the following:

(1) The design pressure of the weakest element in the segment, determined in accordance with Subparts C and D of this part.

(2) The pressure obtained by dividing the pressure to which the segment was tested after construction as follows:

(i) For plastic pipe in all locations, the test pressure is divided by a factor of 1.5.

(ii) For steel pipe operated at 100 p.s.i.g. or more, the test pressure is divided by a factor determined in accordance with the following table:

Class location	Factor	
	Segment installed before (Nov. 12, 1970)	Segment installed after (Nov. 11, 1970)
1.....	1.1	1.1
2.....	1.25	1.25
3.....	1.4	1.5
4.....	1.4	1.5

(3) The highest actual operating pressure to which the segment was subjected during the 5 years preceding July 1, 1970, unless the segment was tested in accordance with paragraph (a)(2) of this section after July 1, 1965, or the segment was uprated in accordance with Subpart K of this part.

(4) For furnace butt welded steel pipe, a pressure equal to 60 percent of the mill test pressure to which the pipe was subjected.

(5) For steel pipe other than furnace butt welded pipe, a pressure equal to 85 percent of the highest test pressure to

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which the pipe has been subjected, whether by mill test or by the post installation test.

(6) The pressure determined by the operator to be the maximum safe pressure after considering the history of the segment, particularly known corrosion and the actual operating pressure.

(b) No person may operate a segment to which paragraph (a) (6) of this section is applicable, unless over-pressure protective devices are installed on the segment in a manner that will prevent the maximum allowable operating pressure from being exceeded, in accordance with § 192.195.

(c) Notwithstanding the other requirements of this section, an operator may operate a segment of pipeline found to be in satisfactory condition, considering its operating and maintenance history, at the highest actual operating pressure to which the segment was subjected during the 5 years preceding July 1, 1970, subject to the requirements of § 192.611.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

§ 192.621 Maximum allowable operating pressure: high-pressure distribution systems.

(a) No person may operate a segment of a high pressure distribution system at a pressure that exceeds the lowest of the following pressures, as applicable:

(1) The design pressure of the weakest element in the segment, determined in accordance with Subparts C and D of this part.

(2) 60 p.s.i.g., for a segment of a distribution system otherwise designed to operate at over 60 p.s.i.g., unless the service lines in the segment are equipped with service regulators or other pressure limiting devices in series that meet the requirements of § 192.197(c).

(3) 25 p.s.i.g. in segments of cast iron pipe in which there are unreinforced bell and spigot joints.

(4) The pressure limits to which a joint could be subjected without the possibility of its parting.

(5) The pressure determined by the operator to be the maximum safe pressure after considering the history of the segment, particularly known corrosion and the actual operating pressures.

(b) No person may operate a segment of pipeline to which paragraph (a) (5) of this section applies, unless overpressure protective devices are installed on

the segment in a manner that will prevent the maximum allowable operating pressure from being exceeded, in accordance with § 192.195.

§ 192.623 Maximum and minimum allowable operating pressure: low-pressure distribution systems.

(a) No person may operate a low-pressure distribution system at a pressure high enough to make unsafe the operation of any connected and properly adjusted low-pressure gas burning equipment.

(b) No person may operate a low pressure distribution system at a pressure lower than the minimum pressure at which the safe and continuing operation of any connected and properly adjusted low-pressure gas burning equipment can be assured.

§ 192.625 Odorization of gas.

(a) Combustible gases in mains and service lines must be odorized as provided in paragraphs (b) through (f) of this section.

(b) The intensity of the odor of combustible gases must be such as to be readily detectable at concentrations of one fifth of the lower explosive limit.

(c) In the concentrations in which it is used, the odorant in combustible gases must comply with the following:

(1) The odorant may not be deleterious to persons, materials, or pipe.

(2) The products of combustion from the odorant may not be toxic when breathed nor may they be corrosive or harmful to those materials to which the products of combustion will be exposed.

(d) The odorant may not be soluble in water to an extent greater than 2.5 parts to 100 parts by weight.

(e) Equipment for odorization must introduce the odorant without wide variations in the level of odorant.

(f) Each operator shall conduct periodic sampling of combustible gases to assure the proper concentration of odorant in accordance with this section.

(g) The odorization requirements of Part 190 of this chapter, as in effect on August 12, 1970, must be complied with, in each State in which odorization of gas in transmission lines is required by that part, until the earlier of the following dates:

(1) January 1, 1972; or

(2) The date upon which the distribution companies in that State are odoriz-

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ing gas in accordance with paragraphs (a) through (f) of this section.

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17335, Nov. 11, 1970]

§ 192.627 Tapping pipelines under pressure.

Each tap made on a pipeline under pressure must be performed by a crew qualified to make hot taps.

§ 192.629 Purging of pipelines.

(a) When a pipeline is being purged of air by use of gas, the gas must be released into one end of the line in a moderately rapid and continuous flow. If gas cannot be supplied in sufficient quantity to prevent the formation of a hazardous mixture of gas and air, a slug of inert gas must be released into the line before the gas.

(b) When a pipeline is being purged of gas by use of air, the air must be released into one end of the line in a moderately rapid and continuous flow. If air cannot be supplied in sufficient quantity to prevent the formation of a hazardous mixture of gas and air, a slug of inert gas must be released into the line before the air.

Subpart M—Maintenance

§ 192.701 Scope.

This subpart prescribes minimum requirements for maintenance of pipeline facilities.

§ 192.703 General.

(a) No person may operate a segment of pipeline, unless it is maintained in accordance with this subpart.

(b) Each segment of pipeline that becomes unsafe must be replaced, repaired, or removed from service.

(c) Hazardous leaks must be repaired promptly.

§ 192.705 Transmission lines: patrolling.

(a) Each operator shall have a patrol program to observe, at intervals not exceeding 1 year, surface conditions on and adjacent to the transmission line right-of-way for indications of leaks, construction activity, and other factors affecting safety and operation.

(b) The frequency of the patrol must be determined by the size of the line, the operating pressures, the class location, terrain, weather, and other relevant factors.

(c) Highway and railroad crossings must be patrolled more often and in greater detail than transmission lines in open country.

§ 192.707 Transmission lines: markers.

Each operator shall install signs or markers wherever necessary to identify the location of a transmission line in order to reduce the possibility of damage or interference.

§ 192.709 Transmission lines: record-keeping.

Each operator shall keep records covering each leak discovered, repair made, transmission line break, leakage survey, line patrol, and inspection, for as long as the segment of transmission line involved remains in service.

§ 192.711 Transmission lines: general requirements for repair procedures.

(a) Each operator shall take immediate temporary measures to protect the public whenever:—

(1) A leak, imperfection, or damage that impairs its serviceability is found in a segment of steel transmission line operating at or above 40 percent of the SMYS; and

(2) It is not feasible to make a permanent repair at the time of discovery.

As soon as feasible, the operator shall make permanent repairs.

(b) Except as provided in § 192.717(c), no operator may use a welded patch as a means of repair.

§ 192.713 Transmission lines: permanent field repair of imperfections and damage.

Each imperfection or damage that impairs the serviceability of a segment of steel transmission line operating at or above 40 percent of SMYS must be repaired, as follows:

(a) If it is feasible to take the segment out of service, the imperfection or damage must be removed by cutting out a cylindrical piece of pipe and replacing it with pipe of similar or greater design strength.

(b) If it is not feasible to take the segment out of service, a full encirclement welded split sleeve of appropriate design must be applied over the imperfection or damage.

(c) If the segment is not taken out of service, the operating pressure must be reduced to a safe level during the repair operations.

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§ 192.715 Transmission lines: permanent field repair of welds.

Each weld that is unacceptable under § 192.241(c) must be repaired as follows:

- (a) If it is feasible to take the segment of transmission line out of service, the weld must be repaired in accordance with the applicable requirements of § 192.245.
- (b) A weld may be repaired in accordance with § 192.245 while the segment of transmission line is in service if—

- (1) The weld is not leaking;
- (2) The pressure in the segment is reduced so that it does not produce a stress that is more than 20 percent of the SMYS of the pipe; and
- (3) Grinding of the defective area can be limited so that at least $\frac{1}{8}$ -inch thickness in the pipe weld remains.

(c) A defective weld which cannot be repaired in accordance with paragraph (a) or (b) of this section must be repaired by installing a full encirclement welded split sleeve of appropriate design.

§ 192.717 Transmission lines: permanent field repair of leaks.

Each permanent field repair of a leak must be made as follows:

- (a) If feasible, the segment of transmission line must be taken out of service and repaired by cutting out a cylindrical piece of pipe and replacing it with pipe of similar or greater design strength.

(b) If it is not feasible to take the segment of transmission line out of service, it must be repaired by installing a full encirclement welded split sleeve of appropriate design.

(c) If the leak is due to a corrosion pit, the repair may be made by installing a properly designed bolt-on leak clamp; or, if the leak is due to a corrosion pit and on pipe of not more than 40,000 p.s.i. SMYS, the repair may be made by fillet welding over the pitted area a steel plate patch with rounded corners, of the same or greater thickness than the pipe, and not more than one-half the diameter of the pipe in size.

§ 192.719 Transmission lines: testing of repairs.

(a) *Testing of replacement pipe.* (1) If a segment of transmission line is repaired by cutting out the damaged portion of the pipe as a cylinder, the replacement pipe must be tested to the pressure required for a new line installed in the same location.

(2) The test required by subparagraph (1) of this paragraph may be made on

the pipe before it is installed, but all field girth butt welds that are not strength tested must be tested after installation by nondestructive tests meeting the requirements of § 192.243.

(b) *Testing of repairs made by welding.* Each repair made by welding in accordance with §§ 192.713, 192.715, and 192.717 must be examined in accordance with § 192.241.

§ 192.721 Distribution systems: patrolling.

(a) The frequency of patrolling mains must be determined by the severity of the conditions which could cause failure or leakage, and the consequent hazards to public safety.

(b) Mains in places or on structures where anticipated physical movement or external loading could cause failure or leakage must be patrolled at intervals not exceeding 3 months.

§ 192.723 Distribution systems: leakage surveys and procedures.

(a) Each operator of a distribution system shall provide for periodic leakage surveys in its operating and maintenance plan.

(b) The type and scope of the leakage control program must be determined by the nature of the operations and the local conditions, but it must meet the following minimum requirements:

(1) A gas detector survey must be conducted in business districts, including tests of the atmosphere in gas, electric, telephone, sewer and water system manholes, at cracks in pavement and sidewalks, and at other locations providing an opportunity for finding gas leaks, at intervals not exceeding 1 year.

(2) Leakage surveys of the distribution system outside of the principal business areas must be made as frequently as necessary, but at intervals not exceeding 5 years.

§ 192.725 Test requirements for re-instating service lines.

(a) Except as provided in paragraph (b) of this section, each disconnected service line must be tested in the same manner as a new service line, before being reinstated.

(b) Each service line temporarily disconnected from the main must be tested from the point of disconnection to the service line valve in the same manner as a new service line, before reconnecting. However, if provisions are made to main-

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tain continuous service, such as by installation of a bypass, any part of the original service line used to maintain continuous service need not be tested.

§ 192.727 Abandonment or inactivation of facilities.

Each operator shall provide for abandonment or inactivation of facilities in its operating and maintenance plan, including the following provisions:

(a) Each facility abandoned in place, or, except when undergoing maintenance, each line not subject to gas pressure, must be disconnected from all sources and supplies of gas, purged of gas, and the ends sealed; however, the line need not be purged when the volume of gas is so small that there is no potential hazard.

(b) If air is used for purging, the operator shall ensure that a combustible mixture is not present after purging.

(c) Each abandoned vault must be filled with a suitable compacted material.

§ 192.729 Compressor stations: procedures for gas compressor units.

Each operator shall establish starting, operating, and shutdown procedures for gas compressor units.

§ 192.731 Compressor stations: inspection and testing of relief devices.

(a) Except for rupture discs, each pressure relieving device in a compressor station must be inspected and tested in accordance with §§ 192.739 and 192.743, and must be operated periodically to determine that it opens at the correct set pressure.

(b) Any defective or inadequate equipment found must be promptly repaired or replaced.

(c) Each remote control shutdown device must be inspected and tested, at intervals not to exceed 1 year, to determine that it functions properly.

§ 192.733 Compressor stations: isolation of equipment for maintenance or alterations.

Each operator shall establish procedures for maintaining compressor stations, including provisions for isolating units or sections of pipe and for purging before returning to service.

§ 192.735 Compressor stations: storage of combustible materials.

(a) Flammable or combustible materials in quantities beyond those re-

quired for everyday use, or other than those normally used in compressor buildings, must be stored a safe distance from the compressor building.

(b) Aboveground oil or gasoline storage tanks must be protected in accordance with National Fire Protection Association Standard No. 30.

§ 192.737 Pipe-type and bottle-type holders: plan for inspection and testing.

Each operator having a pipe-type or bottle-type holder shall establish a plan for the systematic, routine inspection and testing of these facilities, including the following:

(a) Provision must be made for detecting external corrosion before the strength of the container has been impaired.

(b) Periodic sampling and testing of gas in storage must be made to determine the dew point of vapors contained in the stored gas, that if condensed, might cause internal corrosion or interfere with the safe operation of the storage plant.

(c) The pressure control and pressure limiting equipment must be inspected and tested periodically to determine that it is in a safe operating condition and has adequate capacity.

§ 192.739 Pressure limiting and regulating stations: inspection and testing.

Each pressure limiting station, relief device (except rupture discs), and pressure regulating station and its equipment must be subjected, at intervals not exceeding 1 year, to inspections and tests to determine that it is—

(a) In good mechanical condition;

(b) Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed;

(c) Set to function at the correct pressure; and

(d) Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

§ 192.741 Pressure limiting and regulating stations: telemetering or recording gages.

(a) Each distribution system supplied by more than one district pressure regulating station must be equipped with telemetering or recording pressure gages to indicate the gas pressure in the district.

(b) On distribution systems supplied by a single district pressure regulating

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station, the operator shall determine the necessity of installing telemetering or recording gages in the district, taking into consideration the number of customers supplied, the operating pressures, the capacity of the installation, and other operating conditions.

(c) If there are indications of abnormally high- or low-pressure, the regulator and the auxiliary equipment must be inspected and the necessary measures employed to correct any unsatisfactory operating conditions.

§ 192.743 Pressure limiting and regulating stations: testing of relief devices.

(a) If feasible, pressure relief devices (except rupture discs) must be tested in place, at intervals not exceeding 1 year, to determine that they have enough capacity to limit the pressure on the facilities to which they are connected to the desired maximum pressure.

(b) If a test is not feasible, review and calculation of the required capacity of the relieving device at each station must be made, at intervals not exceeding one year, and these required capacities compared with the rated or experimentally determined relieving capacity of the device for the operating conditions under which it works.

(c) If the relieving device is of insufficient capacity, a new or additional device must be installed to provide the additional capacity required.

§ 192.745 Valve maintenance: transmission lines.

Each transmission line valve that might be required during any emergency must be inspected and partially operated, at intervals not exceeding 1 year.

§ 192.747 Valve maintenance: distribution systems.

Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced, at intervals not exceeding 1 year.

§ 192.749 Vault maintenance.

(a) Each vault housing pressure regulating and pressure limiting equipment, and having a volumetric internal content of 200 cubic feet or more, must be inspected, at intervals not exceeding 1 year, to determine that it is in good physical condition and adequately ventilated.

(b) If gas is found in the vault, the equipment in the vault must be in-

spected for leaks, and any leaks found must be repaired.

(c) The ventilating equipment must also be inspected to determine that it is functioning properly.

(d) Each vault cover must be inspected to assure that it does not present a hazard to public safety.

§ 192.751 Prevention of accidental ignition.

Each operator shall take steps to minimize the danger of accidental ignition of gas in any structure or area where the presence of gas constitutes a hazard of fire or explosion, including the following:

(a) When a hazardous amount of gas is being vented into open air, each potential source of ignition must be removed from the area and a fire extinguisher must be provided.

(b) Gas or electric welding or cutting may not be performed on pipe or on pipe components that contain a combustible mixture of gas and air in the area of work.

(c) Post warning signs, where appropriate.

§ 192.753 Caulked bell and spigot joints.

(a) Each cast iron caulked bell and spigot joint that is subject to pressures of 25 p.s.i.g. or more must be sealed with mechanical leak clamps.

(b) Each cast iron caulked bell and spigot joint that is subject to pressures of less than 25 p.s.i.g. and is exposed for any reason, must be sealed by a means other than caulking.

APPENDIX A—INCORPORATED BY REFERENCE

I. List of organizations and addresses.

A. American National Standards Institute (ANSI), 1430 Broadway, New York, N.Y. 10018 (formerly the United States of American 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), 1271 Avenue of the Americas, New York, N.Y. 10020 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, N.Y. 10017.

D. American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pa. 19103.

E. Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 1815 North Fort Myer Drive, Room 913, Arlington, Va. 22209.

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F. National Fire Protection Association (NFPA), 60 Batterymarch Street, Boston, Mass. 02110.

II. Documents incorporated by reference.

A. American Petroleum Institute:

1. API Standard 5L "API Specification for Line Pipe" (1967, 1970 editions).

2. API Standard 5LS "API Specification for Spiral-Weld Line Pipe" (1967, 1970 editions).

3. API Standard 5LX "API Specification for High-Test Line Pipe" (1967, 1970 editions).

4. API Recommended Practice 5LI entitled "API Recommended Practice for Railroad Transportation of Line Pipe" (1967 edition).

5. API Standard 5A "API Specification for Casing, Tubing, and Drill Pipe" (1968 edition).

6. API Standard 6A "Specification for Well-head Equipment" (1968 edition).

7. API Standard 6D "Specification for Pipeline Valves" (1968 edition).

8. API Standard 1104 "Standard for Welding Pipe Line and Related Facilities" (1968 edition).

B. The American Society for Testing and Materials:

1. ASTM Specification A53 "Standard Specification for Welded and Seamless Steel Pipe" (A53-65, A53-68).

2. ASTM Specification A72 "Standard Specification for Welded Wrought-Iron Pipe" (A72-64T, A72-68).

3. ASTM Specification A105 "Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service" (A106-66, A106-68).

4. ASTM Specification A134 "Standard Specification for Electric-Fusion (ARC)-Welded Steel Plate Pipe, Sizes 16 in. and over" (A134-64, A134-68).

5. ASTM Specification A135 "Standard Specification for Electric-Resistance-Welded Steel Pipe" (A135-63T, A135-68).

6. ASTM Specification A139 "Standard Specification for Electric-Fusion (ARC)-Welded Steel Pipe (Sizes 4 in. and over)" (A139-64, A139-68).

7. ASTM Specification A155 "Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service" (A155-65, A155-68).

8. ASTM Specification 211 "Standard Specification for Spiral Welded Steel or Iron Pipe" (A211-63, A211-68).

9. ASTM Specification A333 "Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service" (A333-64, A333-67).

10. ASTM Specification A377 "Standard Specification for Cast Iron and Ductile Iron Pressure Pipe" (A277-66).

11. ASTM Specification A381 "Standard Specification for Metal-Arc-Welded Steel Pipe for High-Pressure Transmission Service" (A381-66, A381-68).

12. ASTM Specification A539 "Standard Specification for Electric-Resistance Welded

Colled Steel Tubing for Gas and Fuel Oil Lines" (A539-65).

13. ASTM Specification B42 "Standard Specification for Seamless Copper Pipe, Standard Sizes" (B42-62, B42-66).

14. ASTM Specification B68 "Standard Specification for Seamless Copper Tube, Bright Annealed" (B68-65, B68-68).

15. ASTM Specification B75 "Standard Specification for Seamless Copper Tube" (B75-65, B75-68).

16. ASTM Specification B88 "Standard Specification for Seamless Copper Water Tube" (B88-66).

17. ASTM Specification B251 "Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube" (B251-66, B251-68).

18. ASTM Specification D2513 "Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings" (D2513-66T, D2513-68).

19. ASTM Specification D2517 "Standard Specification for Reinforced Thermosetting Plastic Gas Pressure Piping and Fittings" (D2517-66T, D2517-67).

20. ASTM Specification A372 "Standard Specification for Carbon and Alloy Steel Forgings for Pressure Vessel Shells" (A372-67).

C. The American National Standards Institute, Inc.:

1. ANSI A21.1 "Thickness Design of Cast-Iron Pipe" (A21.1-1967).

2. ANSI A21.3 "Specifications for Cast Iron Fit Cast Pipe for Gas" (A21.3-1953).

3. ANSI A21.7 "Cast-Iron Pipe Centrifugally Cast in Metal Molds for Gas" (A21.7-1962).

4. ANSI A21.9 is titled "Cast-Iron Pipe Centrifugally Cast in Sand-Lined Molds for Gas" (A21.9-1962).

5. ANSI A21.11 "Rubber Gasket Joints for Cast-Iron Pressure Pipe and Fittings" (A21.11-1964).

6. ANSI 21.50 "Thickness Design of Ductile-Iron Pipe" (A21.50-1965).

6a. ANSI A21.52 "Ductile-Iron Pipe, Centrifugally Cast, in Metal Molds or Sand-Lined Molds for Gas" (A21.52-1965).

7. ANSI B16.1 "Cast Iron Pipe Flanges and Flanged Fittings" (B16.1-1967).

8. ANSI B16.5 "Steel Pipe Flanges and Flanged Fittings" (B16.5-1968).

9. ANSI B16.24 "Bronze Flanges and Flanged Fittings" (B16.24-1962).

10. ANSI B36.10 "Wrought-Steel and Wrought-Iron Pipe" (B36.10-1959).

11. ANSI C1 "National Electrical Code, 1968" (C1-1968).

D. The American Society of Mechanical Engineers:

1. ASME Boiler and Pressure Vessel Code, section VIII is titled "Pressure Vessels, Division 1" (1968 edition).

2. ASME Boiler and Pressure Vessel Code, section IX is titled "Welding Qualifications" (1968 edition).

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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 edition).

2. MSS SP-44 "Steel Pipe Line Flanges" (1955 edition).

3. MSS SP-52 "Cast Iron Pipe Line Valves" (1957 edition).

F. National Fire Protection Association:

1. NFPA Standard 30 "Flammable and Combustible Liquids Code" (1969 edition).

2. NFPA Standard 58 "Storage and Handling, Liquefied Petroleum Gases" (1969 edition).

3. NFPA Standard 59 "LP Gases at Utility Gas Plants" (1968 edition).

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17660, Nov. 17, 1970]

APPENDIX B—QUALIFICATION OF PIPE

I. *Listed Pipe Specifications.* Numbers in parentheses indicate applicable editions.

API 5L—Steel and iron pipe (1967, 1970).

API 5LS—Steel pipe (1967, 1970).

API 5LX—Steel pipe (1967, 1970).

ASTM A53—Steel pipe (1965, 1968).

ASTM A106—Steel pipe (1966, 1968).

ASTM A134—Steel pipe (1964, 1968).

ASTM A135—Steel pipe (1963T, 1968).

ASTM A139—Steel pipe (1964, 1968).

ASTM A155—Steel pipe (1965, 1968).

ASTM A211—Steel and iron pipe (1963, 1968).

ASTM A333—Steel pipe (1964, 1967).

ASTM A377—Cast iron pipe (1966).

ASTM A381—Steel pipe (1966, 1968).

ASTM A539—Steel tubing (1965).

ANSI A21.3—Cast iron pipe (1953).

ANSI A21.7—Cast iron pipe (1962).

ANSI A21.9—Cast iron pipe (1962).

ANSI A21.52—Ductile iron pipe (1965).

ASTM A72—Wrought iron pipe (1964T, 1968).

ASTM B42—Copper pipe (1962, 1966).

ASTM B68—Copper tubing (1965, 1968).

ASTM B75—Copper tubing (1965, 1968).

ASTM B88—Copper tubing (1966).

ASTM B251—Copper pipe and tubing (1966, 1968).

ASTM D2513—Thermoplastic pipe and tubing (1966T, 1968).

ASTM D2517—Thermosetting plastic pipe and tubing (1966T, 1967).

II. *Steel pipe of unknown or unlisted specification.*

A. *Bending Properties.* For pipe 2 inches or less in diameter, a length of pipe must be cold bent through at least 90 degrees around a cylindrical mandrel that has a diameter 12 times the diameter of the pipe, without developing cracks at any portion and without opening the longitudinal weld.

For pipe more than 2 inches in diameter, the pipe must meet the requirements of the flattening tests set forth in ASTM A53, except that the number of tests must be at least equal to the minimum required in paragraph II-D of this appendix to determine yield strength.

B. *Weldability.* A girth weld must be made in the pipe by a welder who is qualified under Subpart E of this part. The weld must be made under the most severe conditions under which welding will be allowed in the field and by means of the same procedure that will be used in the field. On pipe more than 4 inches in diameter, at least one test weld must be made for each 100 lengths of pipe. On pipe 4 inches or less in diameter, at least one test weld must be made for each 400 lengths of pipe. The weld must be tested in accordance with API Standard 1104. If the requirements of API Standard 1104 cannot be met, weldability may be established by making chemical tests for carbon and manganese, and proceeding in accordance with section IX of the ASME Boiler and Pressure Vessel Code. The same number of chemical tests must be made as are required for testing a girth weld.

C. *Inspection.* The pipe must be clean enough to permit adequate inspection. It must be visually inspected to ensure that it is reasonably round and straight and there are no defects which might impair the strength or tightness of the pipe.

D. *Tensile Properties.* If the tensile properties of the pipe are not known, the minimum yield strength may be taken as 24,000 p.s.i.g. or less, or the tensile properties may be established by performing tensile tests as set forth in API Standard 5LX. All test specimens shall be selected at random and the following number of tests must be performed:

NUMBER OF TENSILE TESTS—ALL SIZES

10 lengths or less----	1 set of tests for each length.
11 to 100 lengths----	1 set of tests for each 5 lengths, but not less than 10 tests.
Over 100 lengths----	1 set of tests for each 10 lengths, but not less than 20 tests.

If the yield-tensile ratio, based on the properties determined by those tests, exceeds 0.85, the pipe may be used only as provided in § 192.55(c).

[35 F.R. 13257, Aug. 19, 1970, as amended by Amdt. 192-1, 35 F.R. 17661, Nov. 11, 1970]

APPENDIX C—QUALIFICATION OF WELDERS FOR LOW STRESS LEVEL PIPE

I. *Basic test.* The test is made on pipe 12 inches or less in diameter. The test weld must be made with the pipe in a horizontal fixed position so that the test weld includes at least one section of overhead position welding. The beveling, root opening, and other details must conform to the specifications of the procedure under which the welder is being qualified. Upon completion, the test weld is cut into four coupons and subjected to a root bend test. If, as a result of this test, two or more of the four coupons develop a crack in the weld material, or between the weld material and base metal, that is more than 1/8-inch long in any direction, the weld

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is unacceptable. Cracks that occur on the corner of the specimen during testing are not considered.

II. Additional tests for welders of service line connections to mains. A service line connection fitting is welded to a pipe section with the same diameter as a typical main. The weld is made in the same position as it is made in the field. The weld is unacceptable if it shows a serious undercutting or if it has rolled edges. The weld is tested by attempting to break the fitting off the run pipe. The weld is unacceptable if it breaks and shows incomplete fusion, overlap, or poor penetration at the junction of the fitting and run pipe.

III. Periodic tests for welders of small service lines. Two samples of the welder's work, each about 8 inches long with the weld located approximately in the center, are cut from steel service line and tested as follows:

(1) One sample is centered in a guided bend testing machine and bent to the contour of the die for a distance of 2 inches on each side of the weld. If the sample shows any breaks or cracks after removal from the bending machine, it is unacceptable.

(2) The ends of the second sample are flattened and the entire joint subjected to a tensile strength test. If failure occurs adjacent to or in the weld metal, the weld is unacceptable. If a tensile strength testing machine is not available, this sample must also pass the bending test prescribed in subparagraph (1) of this paragraph.



OFFICE OF THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

Title 49—TRANSPORTATION

Chapter I—Hazardous Materials Regulations Board, Department of Transportation

[Docket No. OPS-5; Amdt. 192-4]

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

Requirements for Corrosion Control

This amendment establishes a new Subpart I to Part 192 in Title 49, Code of Federal Regulations, containing the minimum Federal safety standards for the transportation of gas and for pipeline facilities used in this transportation.

On April 30, 1970, the Department issued a notice of proposed rule making, Notice 70-8, containing requirements for corrosion control (35 F.R. 2127, May 6, 1970). Interested persons were invited to participate in the making of the proposed rules by submitting written comments before June 29, 1970.

On June 6, 1970, an amended notice of proposed rule making was published in the *Federal Register* (Notice 70-10, 35 F.R. 8333) to make certain changes in the proposed rules relating to cast iron and ductile iron pipe. After a request for a public hearing on the requirements of these two notices, a public hearing (see Notice 70-12, 35 F.R. 10596, June 30, 1970) was held on July 20, 1970, and comment was received on the proposed applicability of the requirements to existing pipelines and to cast iron or ductile iron pipe. The information and views presented in the comments and at the hearing have been fully considered, and are reflected in this final rule. Some sections contained in the notice have been consolidated, eliminated, or reorganized and most sections have been renumbered. The deviation table below indicates the corresponding section number in the notice for each section of the final rule.

DERIVATION TABLE

New section	Proposed section
192.451	192.451
192.453	192.481 (b)
192.455	192.453, 192.455, 192.457
192.457	192.467, 192.469, 192.473
192.459	192.481 (a)
192.461	192.455
192.463	192.457
192.465	192.475
192.467	192.463, 192.465, 192.479
192.469	192.459, 192.477
192.471	192.461, 192.477
192.473	192.491
192.475	192.487
192.477	192.487
192.479	192.489
192.481	192.489
192.483	192.481, 192.483, 192.485
192.485	192.483
192.487	192.485 (a) and (b)
192.489	192.485 (c)
192.491	192.493

Subpart I differs in many respects from the notice upon which it was based. Some changes were made for consistency in terminology and format. Others involve the moving of requirements from one section to another for better organization. Other changes are substantive in nature and are based both on the comments received on the notice and on the recommendations of the Technical Pipeline Safety Standards Committee. Each of these changes is within the general scope of the notice on which it was based.

A number of recommendations included in the comments were beyond the scope of the proposed regulations, and could therefore not be included in the final rule. However, these recommendations will be considered for inclusion in future rule-making actions.

Some of the comments were directed to the overall effect of Subpart I, and these general subjects are discussed below. All other significant changes and comments are discussed in a section-by-section analysis.

Effective date. Section 3(c) of the Natural Gas Pipeline Safety Act requires that standards and amendments thereto prescribed under the Act "shall become effective 30 days after the date of issuance . . . unless the Secretary, for good cause recited, determines an earlier or later effective date is required as a result of the period reasonably necessary for compliance". The notice invited comment on the adequacy of specific proposed effective dates, both as to whether earlier dates would be in the interest of increased safety and whether later dates are indicated by factors of cost or feasibility.

Besides the numerous comments received on proposed effective dates, the question was discussed with the Technical Pipeline Safety Standards Committee. Accordingly, this regulation will become effective 30 days after the date of issue. However, certain specific provisions will not become applicable at once. The primary reason for allowing additional time for these provisions is that the corrosion regulations are new requirements that were not contained in the interim minimum Federal regulations, and it is desirable to allow appropriate leadtime to all affected parties to receive copies of the new regulation and to thoroughly review its requirements, and to make the necessary preparations and arrangements for compliance. This additional leadtime is contained in provisions relating to cathodic protection of new pipelines (§ 192.455(a)(2)); cathodic protection of existing pipelines (§ 192.457 (a) and (b)); interference currents (§ 192.473); internal corrosion control (§ 192.475); atmospheric corrosion control of existing aboveground pipelines (§ 192.479); and corrosion control records (§ 192.491).

Retroactive effect on existing pipelines. Some comments related to the effect of this regulation on existing pipelines, and suggested the insertion of dates in particular sections to make clear that these sections are not intended to apply to installations, repairs or replacements made before the effective date. (See § 192.455(e) (installation of aluminum); § 192.461 (protective coating); § 192.467 (electrical isolation); and § 192.483 (repaired or replaced pipe).) As stated in the preamble when Part 192 was issued, there is no basis for such concern. The Natural Gas Pipeline Safety Act (section 3(b)) makes clear that only standards applying to the extension, operation, replacement, or maintenance, and subsequent inspection and subsequent testing are applicable to pipeline facilities in existence on the date the standards are adopted.

However, provisions applicable to existing lines need not be limited to cases in which a facility is hazardous to life

or property, as asserted in some comments, but are permissible as part of the regular operation and maintenance requirements for existing lines. The determination of areas of active corrosion on existing pipelines by electrical survey, by study of corrosion and leak history records and by leak detection survey, as well as the application of cathodic protection to such areas, or repaired or replaced areas, and subsequent inspection and testing to determine the adequacy and efficacy of corrosion control, are examples of operation, replacement, maintenance, and subsequent testing and inspection specifically permitted under the Act.

Where a particular section applies only to existing pipelines, that is made clear by use of the phrase "pipelines installed before August 1, 1971". (See §§ 192.457, 192.479(b).)

Distinction between high and low stress pipe; distinction between bare and coated pipe. To be consistent with the previously issued subparts of Part 192, the terms "transmission line" and "distribution line" have been substituted for the phrases "pipelines, mains and service lines operating at 20 percent or more of SMYS", and "pipelines, mains, or service lines operating at less than 20 percent of SMYS", which were used in the notice. Some of the comments maintained that the distinction between high- and low-stress pipe, and between bare and coated pipe, was unjustifiable as a basis for differing corrosion control requirements. However, the problems of cathodically protecting existing distribution lines are different from those of existing transmission lines. Special problems make compliance in the case of the distribution lines more difficult, so more time must be allowed for meeting these requirements. In many cases it is more practical to cathodically protect an existing coated transmission line in its entirety than to survey it for "hot spots" and cathodically protect only those areas where active corrosion is found. Consequently, it is required that effectively coated existing transmission lines be cathodically protected within 3 years of the effective date, but 5 years is allowed for existing bare transmission lines, all distribution lines and all station piping.

Distinction based on type of metal. Special provisions deal with specific metals having unique characteristics, such as copper (§ 192.455(c)(1)), aluminum (§ 192.455(e)), and cast iron and ductile iron (§ 192.489). However, the phrase "steel or aluminum pipeline", as used in the notice, has been eliminated, since there was no intention to exclude other types of metallic pipe such as wrought iron.

Section 192.451. This section, stating the scope of the subpart, has been rewritten. The word "pipeline" has now been substituted for the words "gas pipeline facilities" and "pipelines, mains, service lines, and related facilities" which were used in proposed § 192.451, as well as in many other sections of the notice. As defined in § 192.3, "pipeline" means all

parts of those physical facilities through which gas moves in transportation, including pipes, valves, and other appurtenances attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. The second sentence of the proposed scope section in the notice was deleted as unnecessary.

Various suggestions were made that the scope section state that these requirements are for the protection of pipelines from "harmful" corrosion, or corrosion "detrimental to safety", or that it state that it prescribes minimum requirements for the protection of pipelines from corrosion, "consistent with public safety", in order to make clear that not every degree or type of existing corrosion imposes an obligation on the operator to take protective steps. These proposals were deemed unnecessary, since their purpose is accomplished by the definition of "active corrosion" in § 192.457(c) as "continuing corrosion which, unless controlled, could result in a condition that is detrimental to public safety". Moreover, under §§ 192.485, 192.487, and 192.489, remedial action is required only where corrosion is of the degree or extent described in those sections. In addition, cathodic protection of most existing lines is now required only in "areas in which active corrosion is found" (§§ 192.457(b) and 192.465(e)) thus eliminating any implication that an operator must cathodically protect the pipeline in all areas of existing corrosion, even where the operator has not been able to detect it.

Section 192.453. This section, based on proposed § 192.481(b), which applied only to cathodic protection systems, now applies to all procedures to implement the requirements of this subpart, "including those for the design, installation, operation, and maintenance of cathodic protection systems".

Recommendations that some standards be included to assure the competence of the "person qualified by experience and training in pipeline corrosion control methods", or that such a person be qualified under the terms of the accreditation program of the National Association of Corrosion Engineers, were deemed inappropriate at this time. The word "corrosion specialist", suggested as a substitute for the word "person", was thought to be redundant in view of the additional language, "qualified by experience and training in pipeline corrosion control methods". A person so qualified, but not officially designated as a corrosion specialist, should not be precluded from acting under this section.

Section 192.445. Paragraph (a) of § 192.455 requires, with certain exceptions, protection against external corrosion for all newly constructed pipelines, by means of a combination of external protective coating and cathodic protection.

The proposed regulation would have required new buried pipelines to be "cathodically protected not later than 1 year after completion of construction".

Since time must be allowed for the environment to reach a stable level due to changes in soil settling and in oxygen and water content of backfill, before final measurements can be taken to determine adequacy of protection, it is now provided that a properly designed cathodic protection system must be "installed and placed in operation within 1 year". An additional year will then be available under § 192.465 for any adjustments necessary because of changes in the soil following construction.

No differentiation has been made in § 192.455(a) between new transmission and new distribution lines. Except as provided in paragraphs (b) and (c), all new pipelines must be coated and cathodically protected.

New pipe that replaces pipe removed from an existing buried or submerged pipeline because of external corrosion, is covered by § 192.483 (a) and (b), but it should be noted that such new replacement pipe also must be coated and cathodically protected.

Paragraph (b) provides an exception to the requirements of paragraph (a). Many comments recommended that an exception to the coating and cathodic protection requirements, similar to that proposed for new copper pipelines (where the operator can demonstrate by test, investigation or experience in the area of application that a corrosive situation does not exist), should be extended to all new pipelines. This has been done in paragraph (b) of § 192.455, but with additional safeguards. Certain minimum tests for soil resistivity and corrosion accelerating bacteria will be required. These tests are a prerequisite in every instance of an installation made without complying with the requirements of paragraph (a). In addition, within 6 months after such an installation, the operator must conduct tests, including pipe-to-soil potential measurements and soil resistivity measurements at potential profile peak locations, and the pipeline must be cathodically protected in those areas in which the tests indicate a corrosive condition exists.

Paragraph (c) provides an additional exception to the requirements for coating and cathodic protection, for new temporary pipelines, where the operating period of service is not to exceed 5 years beyond installation.

Paragraph (d) provides that even where protection of a new buried pipeline against external corrosion control is not required under one of these exceptions set out in paragraphs (b) or (c), if the pipeline is coated, it must then also be cathodically protected. This is necessary because first leaks can develop sooner on a coated pipeline than they would on the same line left bare, since harmful discharge of current would be concentrated at the breaks in the coating (holidays).

Paragraph (e) of § 192.455 has been modified to incorporate suggested language in regard to installation of aluminum, which is the same as that used in

the 1969 edition of NACE Standard RP-01-69. Comments criticized the term "highly alkaline environment" used in the notice as too vague, and suggested that the use of aluminum should be prohibited in "an environment with a natural pH in excess of 8.0", unless tests indicate its suitability in the particular environment involved.

Finally, it should be noted that no exception to the requirements of § 192.455 is provided for new cast iron or ductile iron. Because of the unique physical characteristics of its corrosion process (graphitization), and because of the normal allowance of extra wall thickness, it was argued in some of the comments and at the hearing on July 20, 1970, that it should not be required that newly installed cast iron or ductile iron be coated and cathodically protected, but that a loose polyethylene wrap should be considered an appropriate coating adequate for proper corrosion control. But moisture and ground water which can enter the loose polyethylene wrap may form a breeding ground for bacteriological corrosion. Moreover, in the event there is a break in the polyethylene wrap and corrosion started, there is no way to apply cathodic protection to prevent further corrosion. The current would be intercepted by the insulating qualities of the polyethylene sheet, and cathodic protection would only reach the metal under the break. The other areas under the wrap that may be corroding from water and access to oxygen would not be cathodically protected. Therefore, new cast iron and ductile iron have not been treated differently from steel and a coating bonded to the pipe and cathodic protection are required.

Section 192.457. Whereas § 192.455, which deals with new pipelines, makes no distinction for corrosion control purposes, between new transmission lines and new distribution lines, generally requiring both to be coated and cathodically protected in the entirety, § 192.457, which applies to existing pipelines, has different requirements for coated transmission lines than for distribution lines.

Several comments pointed out that coated pipe with deteriorated coating that is no longer effective should be treated as bare pipe for corrosion control purposes. Accordingly, the proposed requirement that coated pipelines operating at 20 percent or more of SMYS must be cathodically protected in the entirety within 3 years, now applies only to existing buried or submerged transmission lines that have an effective external coating (§ 192.457(a)). The effectiveness of the coating is to be established by tests to determine the current requirements of the pipeline for cathodic protection. Coating is deemed ineffective if the cathodic protection current requirements are substantially the same as if the pipeline were bare.

Paragraph (b) of § 192.457 provides that except for cast iron or ductile bare transmission lines (including those with ineffective coating), bare or coated station piping, and bare or coated distribu-

tion lines, all must be cathodically protected within 5 years in areas in which active corrosion is found. "Active corrosion" is defined in paragraph (c).

The proposed regulation would have required cathodic protection of existing distribution lines and bare transmission lines within 5 years, "in areas in which corrosion exists". The operator was to determine these areas by electrical survey or other means. There appeared to be some concern in the comments that the proposal contained an absolute requirement that every area of existing corrosion be found and protected against within 5 years. This was apparently felt to be impossible for some distribution lines, since determination of areas of corrosion by electrical survey is often impractical in the case of distribution lines (such as those under paved city streets and sidewalks). This has now been changed to require cathodic protection "in areas in which active corrosion is found", and that areas of active corrosion be determined by electrical survey, or "where electrical survey is impractical, by the study of corrosion and leak history records, by leak detection survey, or by other means". This modified language should make clear that the operator is not obligated to take action concerning active corrosion which cannot be found by the required methods. The operator must conduct electrical surveys in areas where they are practical. In other areas, he must make diligent efforts, utilizing leak surveys, all available records such as corrosion and leak history records, or other appropriate methods, to discover active corrosion. Leak surveys could be made by such commonly used means of leak detection as flame ionization, infrared detectors and combustible gas detectors. If these efforts do not indicate the presence of active corrosion, the operator may assume that none exists, until such time as an actual indication of its existence arises. Moreover, it should be noted that an operator may apply for a waiver if it is shown that justification exists for not meeting the 5-year time period in cathodically protecting "hot spots" found by the methods set out in § 192.457(b).

In summary, § 192.457 now provides that existing, effectively coated transmission lines must be cathodically protected in the entirety within 3 years, while all other existing lines (including bare transmission lines, bare or coated buried station piping operating at above or below 20 percent of SMYS, and bare or coated distribution lines) must be cathodically protected within 5 years in areas in which active corrosion is found. On new construction, § 192.455 provides that all new pipe (both transmission and distribution) must be coated and cathodically protected within 1 year of installation unless the operator can demonstrate that a corrosive environment does not exist.

Section 192.459. The requirement that whenever any buried piping is exposed for any reason it must be examined for evidence of external corrosion has been modified. Comments suggested that it be made clear that this requirement would

not necessitate tearing off good coating to examine the pipe. As the section is rewritten, it requires only that "Whenever an operator has knowledge" that any portion of buried pipeline is exposed, the pipe must be examined for evidence of external corrosion "if the pipe is bare or if the coating is deteriorated".

Section 192.461. This section, dealing with protective coating, has been slightly reworded.

Subparagraph (a)(2) requires a protective external coating to have sufficient adhesion to the metal surface to "effectively resist" (rather than "prevent") underfilm migration of moisture, in response to comments asserting that the coating could not absolutely prevent underfilm migration of water.

Paragraph (c) relating to inspection of coating prior to lowering the pipe and backfilling, now requires repair only of "any damage detrimental to effective corrosion control", since the comments indicated that minor damage often does not require repair.

Paragraph (e) is a new paragraph requiring that precautions be taken to minimize damage to coating during installation by boring or driving. This paragraph, although proposed in Notice 70-3, Subpart H (Customer's Meters, Service Regulators, and Service Lines) as proposed § 192.429(b), was omitted in the final rule for that subpart, since it was considered to be more properly a part of the corrosion subpart.

Section 192.463. Paragraph (a) of this section refers to the criteria for cathodic protection contained in a new Appendix D, rather than to paragraph 6.3 of the 1969 edition of NACE Standard RP-01-69. However, it should be noted that the criteria in the appendix are substantially the same as those in the NACE Standard. In addition, it is now provided that "If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of these criteria." It was felt that the possibility of an exception should be provided, but that where the criteria are applicable, they should be followed.

In accordance with several suggested comments, paragraph (d) of proposed section 192.457 was deleted as unnecessary, and paragraph (f) of that proposed section has been reworded to eliminate the requirement that the cathodic protection "assure proper performance of the protective coating system", and instead now requires that the amount of cathodic protection must be controlled "so as not to damage the protective coating or the pipe".

Section 192.465. The section on monitoring differs from the proposal in several ways. It applies to monitoring of both new and existing lines. In paragraph (a), offshore pipelines, where monitoring is impractical, have been excepted. The phrase "at intervals not exceeding 12 months" has been changed to "at least once each calendar year, with intervals not exceeding 15 months". The

purpose of the change was to allow seasonal considerations in scheduling annual inspections, and it was felt that 3 months' leeway would provide sufficient flexibility for this purpose.

Instead of requiring that each interference bond be electrically checked for proper performance at intervals not exceeding 2 months, it is now provided in § 192.465(e) that each interference bond "whose failure would jeopardize structure protection", must be electrically checked for proper performance at intervals not exceeding 2 months. Each other interference bond must be checked at least annually, but with intervals not exceeding 15 months.

Section 192.467. This section, entitled "External corrosion control: Electrical isolation", is based on the proposed sections which dealt with electrical insulation on new construction and existing pipelines, and with clearance between pipe and underground structures on new construction.

Paragraph (a) still requires that each buried pipeline must be electrically isolated from other underground metallic structures, but in accordance with suggestions received, it permits an exception if the pipeline and the other structures are electrically interconnected and cathodically protected as a single unit.

Paragraph (b) of § 192.467, requires that an insulating device be installed where electrical isolation of a portion of a pipeline is necessary to facilitate corrosion control. It was felt that this performance-type language is sufficient to cover such specific situations as the necessary insulation of ferrous valves and fittings installed in underground copper service lines.

Paragraph (c) of § 192.467, providing for electrical isolation of the pipeline from metallic casings that are a part of the underground system, now permits other measures to minimize corrosion of the pipeline inside the casing, where isolation is impractical. The additional language was added in response to comments suggesting that this requirement should not apply to a service going through a casing in a cement or masonry wall, where the casing is above ground. Other measures that may be taken include placing a noncorrosive casing filler made of high dielectric material in the annular space between the pipe and casing.

Paragraph (f) concerning protection against damage due to fault currents and lightning now refers to "areas where fault currents or unusual risk of lightning may be anticipated".

Proposed § 192.463(e) has been eliminated as unnecessary, since the specific situations described in that paragraph are covered by the more performance-oriented type of language of § 192.467 (a) and (b).

Section 192.473. This section now requires that after July 31, 1973, each operator whose pipeline system is subjected to stray currents must have a continuing program to minimize the detrimental effects of such currents.

Comments indicated that the 12-month leadtime originally proposed was insufficient for the acquisition of manpower and equipment for such a program.

Sections 192.475 and 192.477. These sections are essentially the same as proposed. However, paragraph (c) of § 192.475, providing that gas containing more than 0.1 grain of hydrogen sulfide per 100 standard cubic feet may not be stored in pipe-type or bottle-type holders, is newly added. It was originally proposed as part of Notice 70-7, Subpart D (Design of Piping System Components and Facilities), as proposed § 192.168(b), but was not included in Subpart D, since it was considered to be more appropriately within the corrosion subpart.

In response to comments, § 192.477 makes clear that coupons are required only "if corrosive gas is being transported". However, it should be noted that § 192.475(b) applies also in cases where corrosive gas is not being transported, but internal corrosion is caused by other factors.

Sections 192.479 and 192.481. The sections on atmospheric corrosion control have been completely rewritten. The proposal would have required all new and existing steel, cast iron and ductile iron aboveground pipelines to be coated or jacketed within 1 year for the prevention of atmospheric corrosion. This requirement would have applied to aluminum and copper pipe only when exposed to an atmospheric environment corrosive to those metals.

The comments objected to the 1 year time limitation as insufficient, and also suggested that coating only be required where atmospheric corrosion was actually taking place. While § 192.479(a), applying to newly installed aboveground pipelines, still requires that such pipelines be cleaned and coated with a material suitable for the prevention of atmospheric corrosion, it now also allows for an exception to this requirement if the operator can demonstrate by tests, investigation or experience in the area of application that a corrosive atmosphere does not exist.

Paragraph (b), applying to existing aboveground pipelines, now requires that they be cleaned and coated within 3 years, but only in areas where atmospheric corrosion has taken place on the pipeline.

Section 192.481 requires that at intervals not exceeding 3 years, aboveground pipelines must be reevaluated and necessary action taken to maintain protection against atmospheric corrosion.

Section 192.483. This section on general remedial measures requires that all new replacement pipe installed because of external corrosion (including cast iron or ductile iron) must be coated and cathodically protected, as is required for new pipelines in § 192.455(a). The exception to these requirements allowed for new pipelines in § 192.455(b) (where the operator can demonstrate that a corrosive environment does not exist), would not apply to replacement pipe, where

replacement is necessitated by external corrosion, since it would normally be impossible to make such a demonstration. However, it should be noted that if copper pipe is used to replace corroded steel, cast iron or ductile iron, the provisions of § 192.455(c)(2) might permit the use of uncoated copper replacement without cathodic protection, in the highly unlikely event that the operator could demonstrate by test that the environment (which had been corrosive to the other metals) was not corrosive to copper.

Except for repaired cast iron or ductile iron, a segment of buried pipe that is repaired because of external corrosion must be cathodically protected. Repaired cast iron and ductile iron are excepted from the cathodic protection requirement because the density of cathodic protection current, as normally provided by galvanic anodes, is not sufficient to reach the cast iron beneath the graphitized surface so as to prevent further graphitization. Current of such low density from such low electromotive force collects on the graphitized area and continues through adjacent cast iron and back to the galvanic anode source without providing protection.

It should be noted that at this time, the regulations are not requiring that repaired pipe be coated in every case, since it is not always practical to do so, especially where the repair is in a very small area, or on a bare pipeline. However, where the repaired segment is part of an effectively coated pipeline, the repaired area would also have to be coated.

The proposed regulation provided that generally corroded pipe would not need to be replaced or repaired if the operating pressure were reduced so as to be commensurate with the specified limits on operating pressure based on the actual remaining wall thickness. That option is retained in § 192.485(a) covering general corrosion on transmission lines. However, § 192.487(a) dealing with general corrosion on distribution lines does not provide the option of reducing operating pressure instead of replacing the pipe. Since such lines are already operating at low pressure, the reduction of pressure would be meaningless. In this connection, it should be noted that the minimum percentage of remaining wall thickness required in such cases is not contingent on internal pressure (hoop stress) but on external loads.

Sections 192.485 and 192.487. The proposed regulations dealing with remedial measures for isolated corrosion pitting were the subject of considerable comment. Based on the information available at this time, the Department has developed the following regulations which are considered adequate to protect the public:

§ 192.485 Remedial measures: transmission lines. . . .

(b) Localized corrosion pitting. Each segment of transmission line pipe with localized corrosion pitting must be replaced or repaired, or the operating pressure must be reduced based on the actual remaining wall

thickness in the pits, if either of the following exists:

(1) The diameter of the pits as measured at the surface of the pipe is greater than three times the nominal wall thickness of the pipe.

(2) The remaining wall thickness at the bottom of the pits is less than 30 percent of the nominal wall thickness.

§ 192.487 Remedial measures: distribution lines other than cast iron or ductile iron lines. * * *

(b) Localized corrosion pitting. Except for cast iron or ductile iron pipe, each segment of distribution line pipe with localized corrosion pitting must be replaced or repaired if either of the following exists:

(1) The diameter of the pits, as measured at the surface of the pipe, is greater than five times the nominal wall thickness of the pipe.

(2) The remaining wall thickness at the bottom of the pits is less than 20 percent of the nominal wall thickness.

However, we are aware that the completion of research now going on is anticipated in the near future, on the subject of the effect of pitting on the integrity of pipe, requiring repair or replacement for the protection of the public. Accordingly, the Department intends to delay the issuance of these regulations on localized corrosion pitting, in order to hold a public hearing on July 20, 1971, to explore the problem further. (See p. 12309 of this issue.) This will give interested persons an opportunity to present new material or to demonstrate that the criteria set out above are inappropriate.

In issuing this rule, the Department has included general criteria on corrosion pitting in §§ 192.485(b) and 192.487(b) as interim regulations. These interim regulations give the operator discretion to determine the severity of pitting that requires remedial action.

Unless the hearing discloses information indicating other criteria are more appropriate, the regulations set forth above in this preamble will be substituted for the interim provisions within 60 to 90 days from the effective date of this regulation.

Section 192.491. The comments on this provision urged that construction drawings and records should not both be required, and that records or drawings should not be required as to all neighboring structures. In response to these comments, § 192.491(a) now requires that "records or maps" be maintained to show the location of cathodically protected piping, cathodic protection facilities "other than unrecorded galvanic anodes installed prior to August 1, 1971", and neighboring structures that are "bonded to" the cathodic protection system.

In response to other comments urging that the retention of all records of tests, surveys, and inspections is unnecessary and unduly burdensome, paragraph (b) now provides for retention only of records, tests, and inspections in sufficient

detail to demonstrate the adequacy of corrosion control measures, or, in the case of unprotected pipelines, that a corrosive condition does not exist.

Appendix D. An appendix has been added, setting out criteria for cathodic protection required by § 192.463(a), and methods of determining such measurements as voltage, voltage shifts, and polarization voltage shifts. These criteria and methods of measurement are based on the 1969 issue of the National Association of Corrosion Engineers' Standard RP-01-69, Recommended Practice—Control of External Corrosion on Underground or Submerged Metallic Piping Systems.

Report of Technical Pipeline Safety Standards Committee. Section 4 of the Natural Gas Pipeline Safety Act requires that all proposed standards and amendments to such standards be submitted to the Committee and that the Committee be afforded a reasonable opportunity to prepare a report on the "technical feasibility, reasonableness, and practicality of each such proposal". This amendment to Part 192 has been submitted to the Technical Committee and that Committee has submitted a favorable report. The Committee's report and the minority views of the Committee member who disagreed with the majority report are set forth below.

JUNE 21, 1971.

Memorandum to: The Secretary of Transportation, Attention: Joseph C. Caldwell, Acting Director Office of Pipeline Safety.
From: Secretary, Technical Pipeline Safety Standards Committee.
Subject: Office of Pipeline Safety Proposed Requirements For Corrosion Control (Part 192, Subpart I).

The following letter and attachments represent an official report by the Technical Pipeline Safety Standards Committee concerning the Committee action related to "Requirements for Corrosion Control (Part 192, Subpart I)" which the Office of Pipeline Safety proposes to adopt as a part of Minimum Federal Safety Standards: Transportation of Natural and Other Gas by Pipeline.

The Committee reviewed proposals of the Office of Pipeline Safety at a meeting held on April 13-14, 1971, and through an informal ballot procedure recommended modification to the OPS proposed regulations. The Office of Pipeline Safety considered the recommendations of the Technical Committee and prepared a revised draft regulation which reflected recommendations of the Committee. The revised draft regulation accompanied by a "Discussion of Technical Committee Recommendations" prepared by OPS was distributed to the membership of the Committee on May 4, 1971, by the undersigned together with a formal letter-ballot.

The results of the letter-ballot as finally tabulated reveal that 13 members of the Committee approved the proposed regulation as being technically feasible, reasonable and practicable. One member disapproved the proposed regulation.

Attached, as Item A, are the minority views expressed by the dissenting Committee member.

Also attached, as Item B, is a summary of views expressed by Committee members who voted in favor of the proposed regulation but disagreed with minor specifics.

LOUIS W. MENDONÇA.

EXPLANATION OF THE DISAPPROVAL BY FREDERIC A. LANG OF THE PROPOSED MAJORITY REPORT ON THE PROPOSED PART 192 SUBPART I "REQUIREMENTS FOR CORROSION CONTROL."

As a member of the Technical Pipeline Safety Standards Committee, I disapprove of the proposed majority report because it is less than adequate for providing safety to the public living beside gas pipelines, distribution lines, and mains.

Design and operation of pipelines as regulated by Federal Pipeline Safety Standards Part 192 already issued except for this Subpart I, does not contemplate any weakening of the pipe wall by corrosion, therefore, the "Requirements of Corrosion Control" as proposed, should guarantee, within practical limits, that corrosion does not occur. Unfortunately, the regulations as drafted are less than adequate to prevent a dangerous degree of corrosion.

My comments on the need for better corrosion control appear in the transcript of the Committee meetings held April 13 and 14, 1971, to discuss the proposed regulation. In summary, my recommendations are that cathodic protection be used on all piping at all times to prevent corrosion and that scientifically designed sampling be used to determine whether corrosion has occurred. When corrosion has occurred the piping should be replaced or downrated in accordance with the remaining wall thickness available to contain the pressurized gas.

FREDERIC A. LANG.

This regulation is issued under the authority of the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. § 1671 et. seq.), Part 1 of the Regulations of the Office of the Secretary of Transportation (49 CFR Part 1), and the delegation of authority to the Director, Office of Pipeline Safety, dated November 6, 1968 (33 F.R. 16468).

In consideration of the foregoing, a new Subpart I is added to Part 192 of Title 49 of the Code of Federal Regulations, effective August 1, 1971, to read as set forth below.

Issued in Washington, D.C., on June 25, 1971.

JOSEPH C. CALDWELL,
Acting Director,
Office of Pipeline Safety.

Subpart I—Requirements for Corrosion Control

- Sec.
192.451 Scope.
192.463 General.
192.455 External corrosion control: buried or submerged pipelines installed after July 31, 1971.
192.457 External corrosion control: buried or submerged pipelines installed before August 1, 1971.
192.459 External corrosion control: examination of buried pipeline when exposed.
192.461 External corrosion control: protective coating.
192.463 External corrosion control: cathodic protection.
192.465 External corrosion control: monitoring.
192.467 External corrosion control: electrical isolation.
192.469 External corrosion control: test stations.
192.471 External corrosion control: Test leads.

Sec.	
192.473	External corrosion control: interference currents.
192.475	Internal corrosion control: general.
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192.479	Atmospheric corrosion control: general.
192.481	Atmospheric corrosion control: monitoring.
192.483	Remedial measures: general.
192.485	Remedial measures: transmission lines.
192.487	Remedial measures: distribution lines other than cast iron or ductile iron lines.
192.489	Remedial measures: cast iron and ductile iron pipelines.
192.491	Corrosion control records.

Appendix D—Criteria for cathodic protection and determination of measurements.

AUTHORITY: The Provisions of this Subpart I issued under Natural Gas Pipeline Act of 1968 (49 U.S.C. sec. 1671 et seq., Part I regulations of Office of the Secretary of Transportation, 49 CFR Part I, and delegation of authority to Director, Office of Pipeline Safety, 33 F.R. 16468.

Subpart I—Requirements for Corrosion Control

§ 192.451 Scope.

This subpart prescribes minimum requirements for the protection of metallic pipelines from external, internal, and atmospheric corrosion.

§ 192.453 General.

Each operator shall establish procedures to implement the requirements of this subpart. These procedures, including those for the design, installation, operation and maintenance of cathodic protection systems, must be carried out by, or under the direction of, a person qualified by experience and training in pipeline corrosion control methods.

§ 192.455 External corrosion control: buried or submerged pipelines installed after July 31, 1971.

(a) Except as provided in paragraphs (b) and (c) of this section, each buried or submerged pipeline installed after July 31, 1971 must be protected against external corrosion, including the following:

(1) It must have an external protective coating meeting the requirements of § 192.465.

(2) It must have a cathodic protection system designed to protect the pipeline in its entirety in accordance with this subpart, installed and placed in operation within one year after completion of construction.

(b) An operator need not comply with paragraph (a) of this section, if the operator can demonstrate by tests, investigation, or experience in the area of application, including, as a minimum, soil resistivity measurements and tests for corrosion accelerating bacteria, that a corrosive environment does not exist. However, within 6 months after an installation made pursuant to the preceding sentence, the operator shall conduct tests, including pipe-to-soil potential measurements with respect to either a

continuous reference electrode or an electrode using close spacing, not to exceed 20 feet, and soil resistivity measurements at potential profile peak locations, to adequately evaluate the potential profile along the entire pipeline. If the tests made indicate that a corrosive condition exists, the pipeline must be cathodically protected in accordance with paragraph (a) (2) of this section.

(c) An operator need not comply with paragraph (a) of this section, if the operator can demonstrate by tests, investigation, or experience that—

(1) For a copper pipeline, a corrosive environment does not exist; or

(2) For a temporary pipeline with an operating period of service not to exceed 5 years beyond installation, corrosion during the 5-year period of service of the pipeline will not be detrimental to public safety.

(d) Notwithstanding the provisions of paragraph (b) or (c) of this section, if a pipeline is externally coated, it must be cathodically protected in accordance with paragraph (a) (2) of this section.

(e) Aluminum may not be installed in a buried or submerged pipeline if that aluminum is exposed to an environment with a natural pH in excess of 8, unless tests or experience indicate its suitability in the particular environment involved.

§ 192.457 External corrosion control: buried or submerged pipelines installed before August 1, 1971.

(a) Except for buried piping at compressor, regulator, and measuring stations, each buried or submerged transmission line installed before August 1, 1971, that has an effective external coating must, not later than August 1, 1974, be cathodically protected along the entire area that is effectively coated, in accordance with this subpart. For the purposes of this subpart, a pipeline does not have an effective external coating if its cathodic protection current requirements are substantially the same as if it were bare. The operator shall make tests to determine the cathodic protection current requirements.

(b) Except for cast iron or ductile iron, each of the following buried or submerged pipelines installed before August 1, 1971, must, not later than August 1, 1976, be cathodically protected in accordance with this subpart in areas in which active corrosion is found:

(1) Bare or ineffectively coated transmission lines.

(2) Bare or coated pipes at compressor, regulator, and measuring stations.

(3) Bare or coated distribution lines. The operator shall determine the areas of active corrosion by electrical survey, or where electrical survey is impractical, by the study of corrosion and leak history records, by leak detection survey, or by other means.

(c) For the purpose of this subpart, active corrosion means continuing corrosion which, unless controlled, could result in a condition that is detrimental to public safety.

§ 192.459 External corrosion control: examination of buried pipeline when exposed.

Whenever an operator has knowledge that any portion of a buried pipeline is exposed, the exposed portion must be examined for evidence of external corrosion if the pipe is bare, or if the coating is deteriorated. If external corrosion is found, remedial action must be taken to the extent required by § 192.483 and the applicable paragraphs of §§ 192.485, 192.487, or 192.489.

§ 192.461 External corrosion control: protective coating.

(a) Each external protective coating, whether conductive or insulating, applied for the purpose of external corrosion control must—

(1) Be applied on a properly prepared surface;

(2) Have sufficient adhesion to the metal surface to effectively resist under-film migration of moisture;

(3) Be sufficiently ductile to resist cracking;

(4) Have sufficient strength to resist damage due to handling and soil stress; and

(5) Have properties compatible with any supplemental cathodic protection.

(b) Each external protective coating which is an electrically insulating type must also have low moisture absorption and high electrical resistance.

(c) Each external protective coating must be inspected just prior to lowering the pipe into the ditch and backfilling, and any damage detrimental to effective corrosion control must be repaired.

(d) Each external protective coating must be protected from damage resulting from adverse ditch conditions or damage from supporting blocks.

(e) If coated pipe is installed by boring, driving, or other similar method, precautions must be taken to minimize damage to the coating during installation.

§ 192.463 External corrosion control: cathodic protection.

(a) Each cathodic protection system required by this subpart must provide a level of cathodic protection that complies with one or more of the applicable criteria contained in Appendix D of this subpart. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of these criteria.

(b) If amphoteric metals are included in a buried or submerged pipeline containing a metal of different anodic potential—

(1) The amphoteric metals must be electrically isolated from the remainder of the pipeline and cathodically protected; or

(2) The entire buried or submerged pipeline must be cathodically protected at a cathodic potential that meets the requirements of Appendix D of this part for amphoteric metals.

(c) The amount of cathodic protection must be controlled so as not to damage the protective coating or the pipe.

§ 192.465 External corrosion control: monitoring.

(a) Except where impractical on offshore pipelines, each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of § 192.463. However, if tests at those intervals are impractical for separately protected service lines or short sections of protected mains, not in excess of 100 feet, these service lines and mains may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system, must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period.

(b) At intervals not exceeding 2 months, each cathodic protection rectifier or other impressed current power source must be inspected to ensure that it is operating.

(c) At intervals not exceeding 2 months, each reverse current switch, each diode, and each interference bond whose failure would jeopardize structure protection, must be electrically checked for proper performance. Each other interference bond must be checked at least once each calendar year, but with intervals not exceeding 15 months.

(d) Each operator shall take prompt remedial action to correct any deficiencies indicated by the monitoring.

(e) After the initial evaluation required by paragraphs (b) and (c) of § 192.455 and paragraph (b) of § 192.457, each operator shall, at intervals not exceeding 3 years, reevaluate its unprotected pipelines and cathodically protect them in accordance with this subpart in areas in which active corrosion is found. The operator shall determine the areas of active corrosion by electrical survey, or where electrical survey is impractical, by the study of corrosion and leak history records, by leak detection survey, or by other means.

§ 192.467 External corrosion control: electrical isolation.

(a) Each buried or submerged pipeline must be electrically isolated from other underground metallic structures, unless the pipeline and the other structures are electrically interconnected and cathodically protected as a single unit.

(b) An insulating device must be installed where electrical isolation of a portion of a pipeline is necessary to facilitate the application of corrosion control.

(c) Except for unprotected copper inserted in ferrous pipe, each pipeline must be electrically isolated from metallic casings that are a part of the underground system. However, if isolation is not achieved because it is impractical, other measures must be taken to minimize corrosion of the pipeline inside the casing.

(d) Inspection and electrical tests must be made to assure that electrical isolation is adequate.

(e) An insulating device may not be installed in an area where a combustible atmosphere is anticipated unless precautions are taken to prevent arcing.

(f) Where a pipeline is located in close proximity to electrical transmission tower footings, ground cables or counterpoise, or in other areas where fault currents or unusual risk of lightning may be anticipated, it must be provided with protection against damage due to fault currents or lightning, and protective measures must also be taken at insulating devices.

§ 192.469 External corrosion control: test stations.

Except where impractical on offshore and wet marsh area pipelines, each pipeline under cathodic protection required by this subpart must have sufficient test stations or other contact points for electrical measurement to determine the adequacy of cathodic protection.

§ 192.471 External corrosion control: test leads.

(a) Each test lead wire must be connected to the pipeline so as to remain mechanically secure and electrically conductive.

(b) Each test lead wire must be attached to the pipeline so as to minimize stress concentration on the pipe.

(c) Each bared test lead wire and bared metallic area at point of connection to the pipeline must be coated with an electrical insulating material compatible with the pipe coating and the insulation on the wire.

§ 192.473 External corrosion control: interference currents.

(a) After July 31, 1973, each operator whose pipeline system is subjected to stray currents shall have in effect a continuing program to minimize the detrimental effects of such currents.

(b) Each impressed current type cathodic protection system or galvanic anode system must be designed and installed so as to minimize any adverse effects on existing adjacent underground metallic structures.

§ 192.475 Internal corrosion control: general.

(a) After July 31, 1972, corrosive gas may not be transported by pipeline, unless the corrosive effect of the gas on the pipeline has been investigated and steps have been taken to minimize internal corrosion.

(b) Whenever any pipe is removed from a pipeline for any reason, the internal surface must be inspected for evidence of corrosion. If internal corrosion is found—

(1) The adjacent pipe must be investigated to determine the extent of internal corrosion;

(2) Replacement must be made to the extent required by the applicable paragraphs of § 192.485, § 192.487, or § 192.489; and

(2) Steps must be taken to minimize the internal corrosion.

(c) Gas containing more than 0.1 grain of hydrogen sulfide per 100 standard cubic feet may not be stored in pipe-type or bottle-type holders.

§ 192.477 Internal corrosion control: monitoring.

If corrosive gas is being transported, coupons or other suitable means must be used to determine the effectiveness of the steps taken to minimize internal corrosion. After July 31, 1972, each coupon or other means of monitoring internal corrosion must be checked at intervals not exceeding 6 months.

§ 192.479 Atmospheric corrosion control: general.

(a) Pipelines installed after July 31, 1971. Each aboveground pipeline or portion of a pipeline installed after July 31, 1971 that is exposed to the atmosphere must be cleaned and either coated or jacketed with a material suitable for the prevention of atmospheric corrosion. An operator need not comply with this paragraph, if the operator can demonstrate by test, investigation, or experience in the area of application, that a corrosive atmosphere does not exist.

(b) Pipelines installed before August 1, 1971. Not later than August 1, 1974, each operator having an aboveground pipeline or portion of a pipeline installed before August 1, 1971 that is exposed to the atmosphere, shall—

(1) Determine the areas of atmospheric corrosion on the pipeline;

(2) If atmospheric corrosion is found, take remedial measures to the extent required by the applicable paragraphs of §§ 192.485, 192.487, or 192.489; and

(3) Clean and either coat or jacket the areas of atmospheric corrosion on the pipeline with a material suitable for the prevention of atmospheric corrosion.

§ 192.481 Atmospheric corrosion control: monitoring.

After meeting the requirements of paragraphs (a) and (b) of § 192.479, each operator shall, at intervals not exceeding 3 years, reevaluate its aboveground pipelines or portions of pipelines that are exposed to the atmosphere and take remedial action wherever necessary to maintain protection against atmospheric corrosion.

§ 192.483 Remedial measures: general.

(a) Each segment of metallic pipe that replaces pipe removed from a buried or submerged pipeline because of external corrosion must have a properly prepared surface and must be provided with an external protective coating that meets the requirements of § 192.461.

(b) Each segment of metallic pipe that replaces pipe removed from a buried or submerged pipeline because of external corrosion must be cathodically protected in accordance with this subpart.

(c) Except for cast iron or ductile iron pipe, each segment of buried or submerged pipe that is required to be repaired because of external corrosion must

be cathodically protected in accordance with this subpart.

§ 192.485 Remedial measures: transmission lines.

(a) *General corrosion.* Each segment of transmission line pipe with general corrosion and with a remaining wall thickness less than that required for the maximum allowable operating pressure of the pipeline, must be replaced or the operating pressure reduced commensurate with the actual remaining wall thickness. However, if the area of general corrosion is small, the corroded pipe may be repaired. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

(b) *Localized corrosion pitting.* Each segment of transmission line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired, or the operating pressure must be reduced commensurate with the strength of the pipe, based on the actual remaining wall thickness in the pits.

§ 192.487 Remedial measures: distribution lines other than cast iron or ductile iron lines.

(a) *General corrosion.* Except for cast iron or ductile iron pipe, each segment of generally corroded distribution line pipe with a remaining wall thickness less than that required for the maximum allowable operating pressure of the pipeline, or a remaining wall thickness less than 30 percent of the nominal wall thickness, must be replaced. However, if the area of general corrosion is small, the corroded pipe may be repaired. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

(b) *Localized corrosion pitting.* Except for cast iron or ductile iron pipe, each segment of distribution line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired.

§ 192.489 Remedial measures: cast iron and ductile iron pipelines.

(a) *General graphitization.* Each segment of cast iron or ductile iron pipe on which general graphitization is found to a degree where a fracture or any leakage might result, must be replaced.

(b) *Localized graphitization.* Each segment of cast iron or ductile iron pipe on which localized graphitization is found to a degree where any leakage might result, must be replaced or repaired, or sealed by internal sealing methods adequate to prevent or arrest any leakage.

§ 192.491 Corrosion control records.

(a) After July 31, 1972, each operator shall maintain records or maps to show the location of cathodically protected piping, cathodic protection facilities, other than unrecorded galvanic anodes

installed before August 1, 1971, and neighboring structures bonded to the cathodic protection system.

(b) Each of the following records must be retained for as long as the pipeline remains in service:

(1) Each record or map required by paragraph (a) of this section.

(2) Records of each test, survey, or inspection required by this subpart, in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist.

APPENDIX D—CRITERIA FOR CATHODIC PROTECTION AND DETERMINATION OF MEASUREMENTS

I. Criteria for cathodic protection—A. Steel, cast iron, and ductile iron structures.

(1) A negative (cathodic) voltage of at least 0.86 volt, with reference to a saturated copper-copper sulfate half cell. Determination of this voltage must be made with the protective current applied, and in accordance with sections II and IV of this appendix.

(2) A negative (cathodic) voltage shift of at least 300 millivolts. Determination of this voltage shift must be made with the protective current applied, and in accordance with sections II and IV of this appendix. This criterion of voltage shift applies to structures not in contact with metals of different anodic potentials.

(3) A minimum negative (cathodic) polarization voltage shift of 100 millivolts. This polarization voltage shift must be determined in accordance with sections III and IV of this appendix.

(4) A voltage at least as negative (cathodic) as that originally established at the beginning of the Tafel segment of the E-log-I curve. This voltage must be measured in accordance with section IV of this appendix.

(5) A net protective current from the electrolyte into the structure surface as measured by an earth current technique applied at predetermined current discharge (anodic) points of the structure.

B. Aluminum structures. (1) Except as provided in subparagraphs (3) and (4) of this paragraph, a minimum negative (cathodic) voltage shift of 150 millivolts, produced by the application of protective current. The voltage shift must be determined in accordance with sections II and IV of this appendix.

(2) Except as provided in subparagraphs (3) and (4) of this paragraph, a minimum negative (cathodic) polarization voltage shift of 100 millivolts. This polarization voltage shift must be determined in accordance with sections III and IV of this appendix.

(3) Notwithstanding the alternative minimum criteria in subparagraphs (1) and (2) of this paragraph, aluminum, if cathodically protected at voltages in excess of 1.20 volts as measured with reference to a copper-copper sulfate half cell, in accordance with section IV of this appendix, and compensated for the voltage (IR) drops other than those across the structure-electrolyte boundary, may suffer corrosion resulting from the build-up of alkali on the metal surface. A voltage in excess of 1.20 volts may not be used unless previous test results indicate no appreciable corrosion will occur in the particular environment.

(4) Since aluminum may suffer from corrosion under high pH conditions, and since application of cathodic protection tends to increase the pH at the metal surface, careful investigation or testing must be made before applying cathodic protection to stop pitting attack on aluminum structures in environments with a natural pH in excess of 8.

C. Copper structures. A minimum negative (cathodic) polarization voltage shift of 100 millivolts. This polarization voltage shift must be determined in accordance with sections III and IV of this appendix.

D. Metals of different anodic potentials. A negative (cathodic) voltage, measured in accordance with section IV of this appendix, equal to that required for the most anodic metal in the system must be maintained. If amphoteric structures are involved that could be damaged by high alkalinity covered by subparagraphs (3) and (4) of paragraph B of this section, they must be electrically isolated with insulating flanges, or the equivalent.

II. Interpretation of voltage measurement. Voltage (IR) drops other than those across the structure-electrolyte boundary must be considered for valid interpretation of the voltage measurement in paragraph A(1) and (2) and paragraph B(1) of section I of this appendix.

III. Determination of polarization voltage shift. The polarization voltage shift must be determined by interrupting the protective current and measuring the polarization decay. When the current is initially interrupted, an immediate voltage shift occurs. The voltage reading after the immediate shift must be used as the base reading from which to measure polarization decay in paragraphs A(3), B(2), and C of section I of this appendix.

IV. Reference half cells. A. Except as provided in paragraphs B and C of this section, negative (cathodic) voltage must be measured between the structure surface and a saturated copper-copper sulfate half cell contacting the electrolyte.

B. Other standard reference half cells may be substituted for the saturated copper-copper sulfate half cell. Two commonly used reference half cells are listed below along with their voltage equivalent to -0.85 volt as referred to a saturated copper-copper sulfate half cell:

(1) Saturated KCl calomel half cell: -0.78 volt.

(2) Silver-silver chloride half cell used in sea water: -0.80 volt.

C. In addition to the standard reference half cells, an alternate metallic material or structure may be used in place of the saturated copper-copper sulfate half cell if its potential stability is assured and if its voltage equivalent referred to a saturated copper-copper sulfate half cell is established.

[FR Doc. 71-9221 Filed 6-29-71; 8:48 am]



OFFICE OF THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

Title 49—TRANSPORTATION

Chapter I—Hazardous Materials Regulations Board, Department of Transportation

[Amdt. 192-5; Docket No. OPS-11]

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

Extension of Time for Confirmation or Revision of Maximum Allowable Operating Pressure

The purpose of this amendment is to extend the time under § 192.607(b) for completing confirmation or revision of the maximum allowable operating pressure (MAOP) of pipelines operating at more than 40 percent of specified minimum yield strength (SMYS). The amendment also provides for the preparation of comprehensive plans for the completion of this work.

On August 11, 1970, the Department issued Federal safety standards for the transportation of gas and pipeline facilities (35 F.R. 13247, August 19, 1970) replacing the interim standards which had been in effect since 1968. These standards established new definitions for class locations which, among other things, are utilized in the establishment of MAOP for pipelines operating at more than 40 percent of SMYS. Concomitantly, a requirement was included that a study be conducted of all pipelines

operating at more than 40 percent of SMYS to ascertain their class location, and that the MAOP of these pipelines be confirmed or revised in two steps, by January 1, 1972 and January 1, 1973.

However, the Department recognized that considerable diversity of opinion existed as to the time required to complete confirmation or revision of the MAOP of these pipelines and that information on the number of class location changes was incomplete. It was therefore indicated that a public hearing would be held subsequent to the study to give all interested parties an opportunity to recommend adjustments to the schedule set forth in § 192.607(b). That hearing was held on May 12, 1971, and information and recommendations were presented by one industry organization and by a number of operators. The transcript of the hearing and copies of written submissions are included in the public docket on this amendment.

Based on the information presented, the Department believes that an extension of the time for confirmation or revision of MAOP is warranted. This extension will permit more effective use of exchange agreements to avoid disruption of gas supplies. In order to meet the 1972 and 1973 deadlines, the operators would have to complete confirmation or revision of operating pressures before completion of the construction or uprating necessary to maintain established throughput. In many cases, this would result in reduction of operating pressures, causing a substantial curtailment of already short gas supplies. In view of the continuing shortage of energy in some areas of the country, it would not be desirable to require pressure reductions that could disrupt service or cause reduction of storage volumes. In addition, the extension of time permits more efficient utilization of the manpower and equipment available for construction and uprating of pipelines.

Therefore, the time for completing a confirmation or revision determined to be necessary by the study is extended for 2 years, through the end of 1974, with a single completion date for all pipelines rather than a two-step deadline as is now provided. To assure completion within that time, each operator must prepare a comprehensive plan, including a schedule, for carrying out these confirmations or revisions. This plan must be modified periodically in accordance with § 192.13(c) so as to reflect changing conditions and to assure completion within the required time.

A related change has also been made to § 192.611(e) which established the minimum time for confirming or revising the MAOP due to a class location change occurring subsequent to the April 15 study. Since pipeline construction and testing cannot be conducted in many areas of the country during the winter months and since several months lead time is usually required to plan for continuity of service, to order materials, and to design the facilities, one year generally is not adequate for this purpose. Therefore, the time period has been extended to 18 months. This assures the operator of adequate planning time in advance of a construction season before he begins the work and testing associated with confirmation or revision.

The change to § 192.611(e) is made so as to provide for integrating future confirmations or revisions with the overall comprehensive plan. Existing confirmation or revision projects and those which are required by class location changes occurring before July 1, 1973, must be included in the initial comprehensive plan or integrated into it as they become necessary. These confirmations or revisions must be completed no later than the time for completion of the overall plan, i.e., by December 31, 1974. Confirmation or revision required by a change in class location occurring on or after July 1, 1973, must be completed within 18 months of the change in class location. These requirements are also reflected in the second sentence of § 192.607(c).

Since the operators are making a concerted effort during the present construction season to meet the earlier deadlines, and since this is a substantive change that relieves a restriction, I find that notice and public procedure thereon are impracticable and that good cause exists for making this amendment effective on less than 30 days' notice.

In consideration of the foregoing, part 192 of title 49 of the Code of Federal Regulations is amended as follows, effective immediately.

1. Section 192.607 is amended by revising the section heading and paragraph (b), and by adding a new paragraph (c) at the end thereof, to read as follows:

§ 192.607 Plan for confirmation or revision of maximum allowable operating pressure.

* * * * *

(b) Each segment of pipeline that has been determined under paragraph (a) of this section to have an established maximum allowable operating pressure producing a hoop stress that is not commensurate with the class location of the segment of pipeline and that is found to be in satisfactory condition, must have the maximum allowable operating pressure confirmed or revised in accordance with § 192.611. The confirmation or revision must be completed not later than December 31, 1974.

(c) Each operator required to confirm or revise an established maximum allowable operating pressure under paragraph (b) of this section shall, not later than December 31, 1971, prepare a comprehensive plan, including a schedule, for carrying out the confirmations or revisions. The comprehensive plan must also provide for confirmations or revisions determined to be necessary under § 192.609, to the extent that they are caused by changes in class locations taking place before July 1, 1973.

2. Section 192.611(e) is revised to read as follows:

§ 192.611 Change in class location: Confirmation or revision of maximum allowable operating pressure.

• • • • •

(e) Confirmation or revision of the maximum allowable operating pressure that is required as a result of a study under § 192.609 must be completed as follows:

(1) Confirmation or revision due to changes in class location that occur before July 1, 1973, must be completed not later than December 31, 1974.

(2) Confirmation or revision due to changes in class location that occur on or after July 1, 1973, must be completed within 18 months of the change in class location.

(Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. Sec. 1671 et seq.; Part 1, Regulations of the Office of the Secretary of Transportation, 49 CFR Part 1, delegation of authority to the Director, Office of Pipeline Safety, November 6, 1968 (33 F.R. 16468))

Issued in Washington, D.C., on September 7, 1971.

JOSEPH C. CALDWELL,
Acting Director,
Office of Pipeline Safety.

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Title 49—TRANSPORTATION

Chapter I—Hazardous Materials Regulations Board, Department of Transportation

[Amdt. 192-6; Docket No. OPS-3E]

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

Odorization of Gas in Transmission Lines

The purpose of this amendment is to extend, from January 1, 1972, to September 1, 1972, the latest date until which the interim minimum Federal safety standards applying to gas odorization may be kept in effect in those States now requiring the odorization of gas in transmission lines.

On November 6, 1970, the Department issued Amendment 192-2, revising paragraph (a) of § 192.625 of Title 49 of the Code of Federal Regulations and adding a new paragraph (g) to that section (35 F.R. 17325, November 11, 1970). This amendment kept the interim standards applying to odorization in effect, in those States whose interim standards required the odorization of gas in transmission lines, until January 1, 1972, or the date upon which the distribution companies odorize gas in accordance with paragraphs (a) through (f) of § 192.625, whichever occurred earlier.

In the preamble to Amendment 192-2, the Department stated that it "wishes to determine how many distribution companies in those States will be affected by the elimination of the requirement, the extent of the additional action that must be undertaken by them, the length of time it will take them to assume these new functions, and the costs. It also desires to make a more thorough evaluation of the safety benefits of transmission line odorization."

Accordingly, the problem was studied by the Department during the year 1971. However, the information received conflicts in many respects with the information submitted as a result of the original notice of proposed rule making on § 192.625 (35 F.R. 5482, April 2, 1970) and the informal public hearing that was held on September 17, 1970. This is particularly true with regard to the characteristics of various odorants, such as corrosiveness, durability in soil, etc. The Department has not yet arrived at acceptable answers regarding the effect of

these characteristics on the use of odorants in transmission lines, and their contribution to safety in densely populated areas. Consequently, it has become apparent that there is a need for additional study before the interim standards are revoked in those States requiring odorization in transmission lines.

In order to allow sufficient time for the resolution of these problems, the interim standards for odorization of gas transmission lines, in each State now requiring that odorization, will be extended until September 1, 1972, or until the date upon which the distribution companies in that State have actually taken over the odorization of gas in mains and service lines in accordance with the requirements of § 192.625, whichever is earlier. Until that time, gas in transmission lines must continue to be odorized in those States. The additional 9 months should allow sufficient time to resolve the conflicting information that has been developed during the study.

Although section 3 of the Natural Gas Pipeline Safety Act of 1968 provides that no State agency may adopt or continue in force additional or more stringent standards applicable to interstate transmission facilities after the Federal safety standards become effective, the Federal standards are minimum standards and an operator may voluntarily exceed them. Thus, after September 1, 1972 (or the earlier date, if applicable), in those States where transmission companies are equipped to odorize their lines, and actually do so at the present time, they may continue to do so, even in the absence of Federal requirements.

Since the regulatory provisions that are affected by this amendment are in effect, and since this amendment will impose no additional burden on any person, I find that notice and public procedure thereon are impractical and unnecessary and that good cause exists for making it effective on less than 30 days notice.

In consideration of the foregoing, § 192.625 of Title 49 of the Code of Federal Regulations is amended by revising subparagraph (g) (1) to read as follows:

§ 192.625 Odorization of gas.

(g) * * *
(1) September 1, 1972; or

This amendment is issued under the authority of the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. section 1671 et seq.), Part 1 of the Regulations of the Office of the Secretary of Transportation (49 CFR Part 1), and the delegation of authority to the Director, Office of Pipeline Safety, dated November 6, 1968 (33 F.R. 16468.)

Issued in Washington, D.C., on December 28, 1971.

JOSEPH C. CALDWELL,
Acting Director,
Office of Pipeline Safety.

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OFFICE OF THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

Title 49—TRANSPORTATION

Chapter 1—Hazardous Materials Regulations Board, Department of Transportation

[Docket No. OPS-2]

PART 191—TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: REPORTS OF LEAKS

Office of Pipeline Safety; Leak Reporting Requirements

This regulation establishes requirements for the reporting of natural gas pipeline leaks and test failures by operators of transmission and distribution systems and by operators of gathering systems located in populated areas. This regulation supersedes all accident reporting requirements contained in the Interim Minimum Federal Safety Standards for the Transportation of Natural and Other Gas by Pipeline, as set forth in Part 190 of this chapter.

The substance of this regulation was issued as a notice of proposed rule making on July 8, 1969 (Notice 69-1, 33 F.R. 11979). The public was also provided with copies of the forms that the Department proposed for submitting the prescribed reports. In response to these proposals, over 200 comments were submitted. All have been carefully considered and many have resulted in changes that should improve the usefulness of the regulation and the forms.

In addition to considering the comments submitted by the general public, the Department has consulted with the Technical Pipeline Safety Standards Committee established under the Natural Gas Pipeline Safety Act of 1968 with respect to both the proposed regulations and the forms. Their advice and comments have resulted in a number of beneficial changes.

A number of comments expressed the opinion that, due to the broad statement of nonapplicability in § 5(a) of the Natural Gas Pipeline Safety Act (hereinafter referred to as "the Act"), the receipt of a State certification under that section precludes the Secretary from requiring direct reports of accidents or incidents that occur on the intrastate pipeline facilities to which the certification applies. As was indicated in the preamble to the notice proposing these rules, the

Department considers that detailed information about the causes of pipeline accidents or incidents is essential for the development of a rational regulatory program. Notwithstanding the broad language of section 5(a) of the Act, the Secretary has a continuing responsibility for establishing new and amended standards for intrastate pipeline facilities and, where necessary, for issuing orders to abate hazardous conditions discovered therein. In order to properly discharge these responsibilities, the Secretary must have the detailed information that will be provided by this reporting system and the Department believes that there is sufficient authority to support these reporting requirements.

A number of comments indicated that there was some misunderstanding as to the purpose of the required reports. Many persons felt that all reports concerning intrastate facilities covered by a certification under section 5(a) of the Act should be sent to the State agency concerned since that Agency, and not the Secretary, is responsible for enforcement. Others felt that only leaks that caused injury or property damage should be reported. In view of these and other similar comments, a restatement of the purpose of this regulation appears warranted.

The preamble to the notice of proposed rulemaking stated that " * * * the first task is to marshal * * * detailed information about the causes of [leaks]." Thus, the primary purpose of this regulation is to provide for the accumulation of factual data that will give the Department a sound statistical base with which to define safety problems, determine their underlying causes, and propose regulatory solutions. For this purpose, an accident or leak does not become less significant because no one was injured or the damage was minimal. Nor does the existence of a regulatory violation or lack thereof have any bearing upon the statistical impact of a particular mishap. If reports were limited to instances such as these, the data base would be much narrower and therefore less likely to suggest appropriate regulatory solutions.

Another aspect of the reporting requirements that received significant attention in the comments was the question of confidentiality of the reports. Several comments requested that reports be classified as confidential and not be made available to the general public, because of the possibility they might be used "for other purposes which could be detrimental to their interests." Concern was expressed that information might be quoted out of context, distorting the truth, and presenting an erroneous image of a particular reporting company. It was further urged that confidentiality was required "to protect against unwarranted claims and nuisance litigation,"

since the required reports could include questions, the answers to which might be "self-incriminating in the event of future litigation." In this connection it was also claimed that questions relating to the value of property owned by others and damaged by pipeline accidents, are not pertinent to the cause of the incidents, and might expose the reporting company to unnecessary litigation, or at least place it at a disadvantage in contesting claims for damage. It was accordingly requested that if the reports are not kept confidential, the section concerning property damage be rewritten so as to require the submission of estimated damage to the property "of the company and others," rather than "of the company or others." This last request has to some extent been accepted as is indicated below in the discussion of changes to these forms.

These arguments are all necessarily speculative. On consideration and analysis of all of these comments, they do not contain any argument that is substantial enough to require that the reports be kept confidential.

It is the policy of the Department of Transportation to make information available to the public to the greatest extent possible in keeping with the spirit of the Freedom of Information Act (5 U.S.C. 552). In the light of the statute, a refusal to permit public access to accident reports would be contrary to sound public policy. The public interest is better served by not keeping such reports confidential.

The only statutory exceptions to the basic requirement of disclosure are set out in section 552(b). None of these exceptions provides confidentiality for the reports under consideration here. Section 552(b) (4) excepts "trade secrets and commercial or financial information obtained from a person and privileged or confidential." However, the legislative history indicates that this exception refers to instances where privileged information (not required by law, and that would not customarily be released to the public) is voluntarily furnished and received in confidence. Examples are commercial or financial information submitted with loan applications, or information voluntarily given to the Government in confidence for the purpose of compiling statistics which are then published in the aggregate.

Moreover, in promulgating the regulations by which the Department implemented the Freedom of Information Act (49 CFR Part 7), the Secretary announced that "the policy of the Department will be to make all information available to the public except that which must not be disclosed in the national interest, to protect the right of an individual to personal privacy, or to insure the effective conduct of public business. To

this end, the [regulation] provides that information will be made available to the public even if it falls within one of the exemptions set forth in section 552(b), unless the release of that information would be inconsistent with the purpose of the exemption" (32 F.R. 9284 (1967)).

The exemption of documents from mandatory public disclosure merely authorizes the Secretary to withhold them, it does not compel him to do so.

Section 7.51 of the regulations provides that, even though a record is exempt from public inspection, nevertheless the Department will release it, "unless it determines that the release of that record would be inconsistent with a purpose of" the particular exemption.

There is nothing in the Natural Gas Pipeline Safety Act of 1968 which overrides the basic policy embodied in the Freedom of Information Act favoring disclosure of public records. On the contrary, the specific provision in section 12 (d) of the Natural Gas Pipeline Safety Act that "information (which) contains or relates to a trade secret referred to in section 1905 of title 18 of the United States Code shall be considered confidential for the purpose of that Section," suggests that Congress chose not to prevent disclosure of other information obtained by the Government under the Act.

The policy statement of the Department of Transportation regarding the Office of Pipeline Safety, states that the Office, in administering the Natural Gas Pipeline Safety Act of 1968, will "act as a clearing house of safety information, systematically distributing safety information acquired from government and industry research and development programs and from industry operating experience." It is further stated that the general public will have ample opportunity to participate in the identification and definition of safety problems, and that "while we may deal on a daily basis with representatives of the affected industry, we recognize that it is our duty to ensure that the interests of the unorganized general public are served."

Finally, it must be pointed out that accident reports are not protected from disclosure for any other mode of transportation in the Department. The availability of these reports does not appear to have caused any great difficulty to the other transportation industries, and no reason is apparent for a different treatment of gas pipeline accident reports.

A number of comments stated that leak reports with regard to intrastate pipeline facilities should be made only to the State regulatory agencies because these agencies were better equipped to deal with these essentially local safety problems. While the State agencies have a major legitimate interest in these reports and should receive them if they so desire, nonetheless the Secretary must also have full access to this information to be able to carry out his responsibilities

under the Act. The collection and compilation of these statistics on a nationwide basis gives them much greater validity and value than those which would be assembled by each individual State. Consequently, for the reasons discussed above, the general requirement for making reports directly to the Secretary is retained. However, § 191.7 has been modified to permit, under certain conditions, the submission of reports relating to intrastate facilities that are the subject of a State certification under section 5(a) of the Act, directly to a State agency rather than to the Secretary. This may be done if the regulations under which that agency operates require submission in duplicate to the State and provide for further transmittal of one copy to the Department, within 10 days for leak reports and not later than February 15th for annual reports. While not specifically set forth in the regulation, under this change each State will also have the option of requiring that only one copy of each report relating to pipeline facilities under its jurisdiction be sent to the State, in which case the requirement for direct reporting to the Secretary would remain.

A discussion of each section of the regulation follows with respect to some of the more significant comments and changes that have been made.

§ 191.1. Several comments pointed out that the scope of the proposed rules appeared to go beyond the authority contained in the Act. Therefore, § 191.1 has been modified to conform to the limits stated in the Act by excluding gathering lines outside of certain specified areas.

§ 191.3. In response to several comments, the term "system failure" and the various gradations of leaks have been removed from the definitions. In their place, the scope provisions in section 191.1 have been restated to limit the applicability of the regulation to leaks that would have been included in the proposed definition as "Grade 1" and "Grade 2" leaks and to exclude therefrom the leaks that would have been defined as "Grade 3" leaks. It appears that an adequate statistical base can be obtained by requiring the reporting of only the more significant leaks that require immediate or scheduled repair. Certain leaks will require telephonic notice as specified in section 191.5. These and other leaks must also be individually reported in accordance with criteria set forth in sections 191.9 and 191.15. These criteria replace the different gradations of leaks that were proposed.

In response to the request in the preamble to the notice of proposed rule making, a number of suggestions were made as to definitions for transmission lines of a distribution system and for transmission, gathering, and distribution systems. It appears that these terms are fairly well understood throughout the industry, and there should be no need to prescribe precise definitions at this time. If any difficulties arise, the

Department will examine the facts in each situation and will establish definitions as they are needed. Those lines of distribution systems that must be reported as a transmission system are clearly delineated by the criteria set forth in section 191.13.

The definition of "system" has been changed slightly to make it clear that service lines and customers' meters are included in that term.

A number of other definitions have been added to section 191.3. The terms "gas," "municipality," "person," "pipeline facilities," "Secretary," "State," and "transportation of gas" are included as they are defined in the Act with minor changes to conform to the purpose, language, and style of this regulation. As requested by comments, definitions of the terms "operator" and "test failure" are also included. An "operator" is defined as any person (as person is defined in section 191.3) who engages in the transportation of gas. "Test failure" is defined to include only breaks or ruptures of such magnitude that repair is required before continuation of the test. This limited definition, which encompasses testing with gas, air, or water, is intended to reduce the number of reports required due to failures during testing.

§ 191.5. This section has not been changed significantly. Some comments requested the option of reporting by telegraph in any case in which the person reporting is not able to reach the correct person by telephone. However, this problem will not arise since the published phone number will be manned 24 hours a day, 7 days a week.

The term "failure" was used uniformly in the proposal to describe the incident to be reported, and many comments requested that this be changed to either accident, incident, or leak. As stated above in conjunction with the changes in definitions, the scope of the regulation has been restated to clearly delineate the leaks to which it applies.

Some comments suggested the deletion of certain of the criteria for making these reports. The five stated categories are virtually identical to those developed by the Federal Power Commission for telephonic reports of accidents. The experience of the Commission indicates that these types of incidents are of sufficient magnitude to require immediate notification in order that the Department may investigate the incident and take any action that may be necessary to protect persons or property.

§ 191.9. Individual leak reports under this section will not be required from distribution companies providing service to less than 100,000 customers. Studies by the Department indicate that approximately 28 percent of the total number of distribution companies have over 100,000 customers. This group of larger companies services over 85 percent of the total number of gas customers in the United States. Requiring reports only from this group of companies will furnish a statistically valid sample and will significantly lessen the reporting burden on smaller companies who are least able to bear it.

Several comments suggested that the information on this report for distribution companies could be summarized and submitted annually or semiannually. This reporting requirement is designed to elicit information that might be the basis for prompt regulatory action or for the issuance of an order requiring immediate steps to remove a hazardous condition. A delay of 6 months or a year in receiving this information would significantly reduce the value of this information and make it unusable for most of these purposes.

Many comments also urged a longer reporting period. For the reasons discussed above and also to facilitate any investigations that may appear to be necessary, the 20-day reporting period has been retained. The forms make it clear that if certain information is not available the incomplete report should be submitted indicating this unavailability. When the information becomes available, a supplemental report will be submitted. This in effect permits operators to take as much time as is reasonably necessary to assemble all of the information while still assuring the Department of early receipt of the first written report.

§ 191.11. A number of comments on this section and § 191.17 requested a later reporting date for the annual report, varying from March 15 to April 15. The Department is required to submit its annual report to Congress on March 17th and in order to allow adequate time to compile the data from these annual reports for inclusion in the Departmental report, a reporting date of February 15th is necessary. However, to allow operators more time to organize their internal reporting and information systems so as to be able to meet the February 15th deadline, the first annual report will not be required until 1971 for calendar year 1970. This will also satisfy a number of comments that indicated that assembling the cumulative information for 1969 would be very difficult due to the time that has passed since most of the incidents occurred.

§ 191.13. As discussed above, a large number of suggestions were made as to classifying "transmission lines of a distribution system". This section sets forth the two basic criteria that have been selected for this purpose. Reports involving pipeline facilities that operate at 20 percent or more of specified minimum yield strength (SMYS) or that are used to

convey gas into or out of storage, are to be submitted in accordance with the requirements for transmission systems as specified in § 191.15 and 191.17.

§ 191.15. This section now contains the requirements both for leaks occurring during normal operations and for test failures. Both will be reported on the same form, thereby reducing the number of different forms for these operators from three to two.

The form prescribed by this section has been developed in coordination with the Federal Power Commission so as to require most of the information presently required on their incident reports. The Commission is preparing to amend its regulations to eliminate all duplicative reporting requirements. When this is completed, it is expected that the Commission will require that copies of certain of the Department of Transportation reports be submitted to it.

§ 191.17. The requirements for annual reports for transmission or gathering systems has been reworded slightly. The discussion with respect to § 191.11 applies to this section as well.

§ 191.19. This new section has been added to notify interested persons as to where copies of the prescribed forms may be obtained. It also provides that other formats may be used if acceptable to the Secretary. This will permit submission of reports in machine record form when the Department develops its statistical systems sufficiently to accommodate information in this form.

Forms. The comments on the proposed forms were very detailed and very helpful in making necessary revisions. The forms have been reorganized and reworded so as to eliminate redundant and unnecessary questions and to present the remaining questions more precisely.

Several comments objected to the requirements for reporting the pH of soil and soil resistivity. These items have been retained in the forms for reporting on corrosion caused leaks because they give environmental information needed for the determination and evaluation of corrosion control measures and because they are easily obtained. However, the requirement for reporting soil resistivity has been modified to require reporting of the most recent soil resistivity measurement in the area of the leak instead of requiring an actual test to be made at the leak site upon discovery of the leak. The requirement is stated so that if a soil resistivity measurement is not available then it will not be necessary to obtain one.

Several objections were made to requiring a report of "Unaccounted for gas". It is recognized that this information is not precise and that care must be taken in its use. Nevertheless, it is believed that this information should be obtained and studied so that it can be determined whether there is a connection between loss of gas and accidents.

Due to the time required to prepare, print, and distribute an adequate supply of the forms for public use, the printed forms may not be available at the time this regulation becomes effective. In that

event, a small supply of temporary forms will be distributed for use until receipt of the permanent printed forms. These temporary forms may be reproduced by any company if additional copies are needed in the interim period.

In consideration of the foregoing and for the reasons discussed in the preamble to Notice 69-1, Title 49 of the Code of Federal Regulations is amended by adding a new Part 191 to read as set forth below, effective February 9, 1970.

Issued in Washington, D.C., on December 31, 1969.

W. C. JENNINGS,
Acting Director,
Office of Pipeline Safety.

PART 191—TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE; REPORTS OF LEAKS

Sec.	Scope.
191.1	Definitions.
191.5	Telephone notice of certain leaks.
191.7	Addressee for written reports.
191.9	Distribution system: Leak report.
191.11	Distribution system: Annual report.
191.13	Distribution system: Certain facilities reported as a transmission system.
191.15	Transmission and gathering systems: Leak report.
191.17	Transmission and gathering systems: Annual report.
191.19	Report forms.

AUTHORITY: The provision of this Part 191 issued under the Natural Gas Pipeline Safety Act (49 U.S.C. 1671 et seq.), Part 1 of the Regulations of the Office of the Secretary of Transportation (49 CFR Part 1), and the delegation of authority to the Director, Office of Pipeline Safety, dated November 6, 1968 (33 F.R. 16468).

§ 191.1 Scope.

(a) This part prescribes requirements for the reporting of gas leaks that are not intended by the operator and that require immediate or scheduled repair and of test failures, by persons engaged in the transportation of gas. However, it does not apply to leaks and test failures that occur in the gathering of gas outside of the following areas:

(1) An area within the limits of any incorporated or unincorporated city, town, or village; or

(2) Any designated residential or commercial area such as a subdivision, business or shopping center, or community development.

(b) The reporting requirements in this part supersede any accident or leak reporting requirements that were incorporated by reference in the Interim Minimum Federal Safety Standards in Part 190 of this chapter.

§ 191.3 Definitions.

As used in this part and in the DOT Forms referenced in this part—

"Gas" means natural gas, flammable gas, or gas which is toxic or corrosive;

"Municipality" means a city, county, or any other political subdivision of a State;

"Operator" means a person who engages in the transportation of gas;

"Person" means any individual, firm, joint venture, partnership, corporation, association, State, municipality, coopera-

tive association, or joint stock association, and includes any trustee, receiver, assignee, or personal representative thereof;

"Pipeline facilities" includes, without limitation, new and existing pipe, right-of-way, and any equipment facility, or building used in the transportation of gas or the treatment of gas during the course of transportation;

"Secretary" means the Secretary of Transportation or any person to whom he has delegated authority in the matter concerned;

"State" includes each of the several States, the District of Columbia, and the Commonwealth of Puerto Rico;

"System" means all pipeline facilities used by a particular operator in the transportation of gas, including but not limited to, line pipe, valves and other appurtenances connected to line pipe, compressor units, fabricated assemblies associated with compressor units, metering (including customers' meters) and delivery stations, and fabricated assemblies in metering and delivery stations;

"Test failure" means a break or rupture that occurs during strength-proof testing of transmission or gathering lines that is of such magnitude as to require repair before continuation of the test;

"Transportation of gas" means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas in or affecting interstate or foreign commerce.

§ 191.5 Telephonic notice of certain leaks.

(a) At the earliest practicable moment following discovery, each operator shall give notice in accordance with paragraph (b) of this section of any leak that—

(1) Caused a death or a personal injury requiring hospitalization;

(2) Required the taking of any segment of transmission pipeline out of service;

(3) Resulted in gas igniting;

(4) Caused estimated damage to the property of the operator, or others, or both, of a total of \$5,000 or more; or

(5) In the judgment of the operator, was significant even though it did not meet the criteria of subparagraphs (1), (2), (3), or (4) of this paragraph.

An operator need not give notice of a leak that met only the criteria of subparagraph (2) or (3) of this paragraph, if it occurred solely as a result of, or in connection with, planned or routine maintenance or construction.

(b) Each notice required by paragraph (a) of this section shall be made by telephone to Area Code 202-962-6000 and shall include the following information:

(1) The location of the leak.

(2) The time of the leak.

(3) The fatalities and personal injuries, if any.

(4) All other significant facts that are known by the operator that are relevant to the cause of the leak or extent of the damages.

§ 191.7 Addressee for written reports.

Each written report required by this part must be made to the Director, Office of Pipeline Safety, Department of Transportation, Washington, D.C. 20590. However, reports for intrastate facilities subject to the jurisdiction of a State agency pursuant to certification under section 5(a) of the Natural Gas Pipeline Safety Act, may be submitted in duplicate to the State agency if the regulations of that agency require submission of these reports and provide for further transmittal of one copy, within 10 days of receipt for leak reports and not later than February 15 for annual reports, to the Director, Office of Pipeline Safety.

§ 191.9 Distribution system: Leak report.

(a) Each operator of a distribution system serving more than 100,000 customers shall, as soon as practicable but not more than 20 days after detection, report the following on Department of Transportation Form DOT-F-7100.1: (1) A leak that required notice by telephone under § 191.5.

(2) A leak that, because of its location, required immediate repair and other emergency action to protect the public such as evacuation of a building, blocking off an area, or rerouting of traffic.

(b) Where additional related information is obtained after a report is submitted under paragraph (a) of this section, the operator shall make a supplemental report as soon as practicable with a clear reference by date and subject to the original report.

§ 191.11 Distribution system: Annual report.

Each operator of a distribution system shall submit an annual report on Department of Transportation Form DOT-F-7100.1-1. This report must be submitted for the preceding calendar year not later than February 15, 1971, and not later than February 15 of each year thereafter.

§ 191.13 Distribution system: Certain facilities reported as a transmission system.

Each operator of a distribution system shall, for pipeline facilities that operate at 20 percent or more of specified minimum yield strength, or that are used to convey gas into or out of storage, submit reports for those facilities under § 191.15 and § 191.17.

§ 191.15 Transmission and gathering systems: Leak report.

(a) Each operator of a transmission system or a gathering system shall, as soon as practicable but not more than 20 days after detection, report the following on Department of Transportation Form DOT-F-7100.2:

(1) A leak that required notice by telephone under § 191.5.

(2) A leak in a transmission line that required immediate repair.

(3) A test failure that occurred while testing either with gas or another test medium.

(b) Where additional related information is obtained after a report is submitted under paragraph (a) of this section, the operator shall make a supplemental report as soon as practicable with

a clear reference by date and subject to the original report.

§ 191.17 Transmission and gathering systems: Annual report.

Each operator of a transmission system or a gathering system shall submit an annual report on Department of Transportation Form DOT-F-7100.2-1. This report must be submitted for the preceding calendar year not later than February 15, 1971, and not later than February 15 of each year thereafter.

§ 191.19 Report forms.

Copies of the prescribed report forms are available without charge upon request from the Office of Pipeline Safety. Additional copies in this prescribed format may be reproduced and used if in the same size and kind of paper. In addition, the information required by these forms may be submitted by any other means that is acceptable to the Secretary.

Note: The recordkeeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

[F.R. Doc. 70-318; Filed, Jan. 7, 1970; 8:50 a.m.]

Federal Register
Pages 317 thru 321

TITLE 49--TRANSPORTATION

Chapter 1--Hazardous Materials Regulations Board,
Department of Transportation

[Docket OPS-2; Amdt. 191-1]

Part 191--Transportation of Natural and Other Gas
By Pipeline: Reports of Leaks

Office of Pipeline Safety; Leak Reporting Requirements

The purpose of this amendment is to modify Section 191.5(b) of 49 CFR, Part 191--Transportation of Natural and Other Gas by Pipeline: Reports of Leaks.

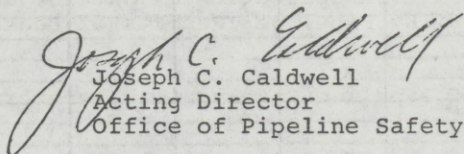
Section 191.5(b) deals with telephonic notice of certain leaks, and provides that each notice required by Paragraph (a) of the section shall be made by telephone to area code (202) 962-6000. This telephone number is being changed, effective immediately. Since this amendment will impose no additional burden on any person, I find that notice and public procedure are not necessary, and that good cause exists for making it effective on less than 30 days notice.

In consideration of the foregoing, Part 191 of Title 49 of the Code of Federal Regulations is amended as follows, effective April 20, 1971.

This amendment is issued under the authority of the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. 1671 et seq.), Part 1 of the Regulations of the Office of the

Secretary of Transportation (49 CFR Part 1), and the delegation of authority to the Director, Office of Pipeline Safety, dated November 6, 1968 (33 F.R. 16468).

Issued in Washington, D. C. on April 14, 1971.


Joseph C. Caldwell
Acting Director
Office of Pipeline Safety

Section 191.5 is amended by revising Paragraph (b) to read as follows:

- (b) Each notice required by Paragraph (a) of this section shall be made by telephone to Area Code (202) 426-0700 and shall include the following information.
1. The location of the leak.
 2. The time of the leak.
 3. The fatalities and personal injuries, if any.
 4. All other significant facts that are known by the operator that are relevant to the cause of the leak or extent of the damages.

71-018 0167

Appendix 9

Status of State Agency Certifications and Agreements and of States Serving as Agents for Interstate Lines as of December 31, 1971				
STATE	Section 5(a) Certifications	Section 5(b) Agreements	Agent on Interstate Transmission	
ALABAMA	X			
ALASKA		X	1/	
ARIZONA	X			
ARKANSAS	X			
CALIFORNIA	X		1/	
COLORADO	X			
CONNECTICUT		X	X	
DELAWARE		X		
FLORIDA	X		X	
GEORGIA	X			
HAWAII		X	1/	
IDAH0	X			
ILLINOIS	X			
INDIANA	X			
IOWA	X			Withdrew in 1971 serving as agent on interstate lines
KANSAS	X		X	
KENTUCKY	X		X	
LOUISIANA				No certification or agreement received in 1971
MAINE	X		1/	
MARYLAND	X		X	
MASSACHUSETTS		X	X	
MICHIGAN	X		X	
MINNESOTA		X		
MISSISSIPPI	X			
MISSOURI	X			
MONTANA	X		X	
NEBRASKA		X		
NEVADA	X			
NEW HAMPSHIRE	X		X	
NEW JERSEY			X	No certification or agreement received in 1971
NEW MEXICO	X			
NEW YORK	X			
NORTH CAROLINA	X		X	
NORTH DAKOTA		X		
OHIO		X	X	
OKLAHOMA	X		X	
OREGON	X			
PENNSYLVANIA		X		
RHODE ISLAND		X	X	
SOUTH CAROLINA	X			
SOUTH DAKOTA	X			
TENNESSEE	X			
TEXAS	X			
UTAH	X		X	
VERMONT		X		
VIRGINIA	X		X	
WASHINGTON	X		X	
WEST VIRGINIA	X		X	
WISCONSIN	X		X	
WYOMING	X		X	
DIST. OF COL.		X	X	
PUERTO RICO	X		1/	
TOTAL	37	13	21	

FOOTNOTES

1/ No interstate gas transmission lines reported in State.

