ANNUAL REPORT ON PIPELINE SAFETY

CALENDAR YEAR 1993

Prepared By:

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BACKGROUND

Section 16 of the Natural Gas Pipeline Safety Act of 1968 (NGPSA), as amended (49 U.S.C. App. § 1671 et seq.), and Section 213 of the Hazardous Liquid Pipeline Safety Act of 1979 (HLPSA), as amended (49 U.S.C. App. § 2001 et seq.), require the Department of Transportation to report annually on its pipeline safety program. This report provides an overview of pipeline safety program activities during Calendar Year (CY) 1993.

The Department's pipeline mission is to protect the people and the environment of the United States through a comprehensive, risk-based pipeline safety program. The Department develops, issues, and enforces minimum pipeline safety regulations. NGPSA provides for Federal safety regulation of pipeline facilities used in the transportation of natural gas, while HLPSA provides for safety regulation of pipeline facilities used in the transportation of hazardous liquids. Both NGPSA and HLPSA provide a framework for promoting pipeline safety through exclusive Federal authority for regulation of interstate pipeline facilities, and Federal delegation to the states of all or part of the regulatory responsibility for intrastate pipeline facilities.

The Department provides grant funding to support states in conducting intrastate gas and hazardous liquid pipeline safety programs; ensures operator compliance through a risk-based pipeline inspection plan and use of enforcement actions as a deterrent against violators; collects, compiles, and analyzes pipeline safety and operating data; and conducts training through its Transportation Safety Institute (TSI), for government and industry personnel in application of the pipeline safety regulations. The Department also undertakes research with emphasis on solid analytical methodologies and state-of-the-art technology to provide the foundation necessary for planning, evaluating, and implementing the pipeline safety program.

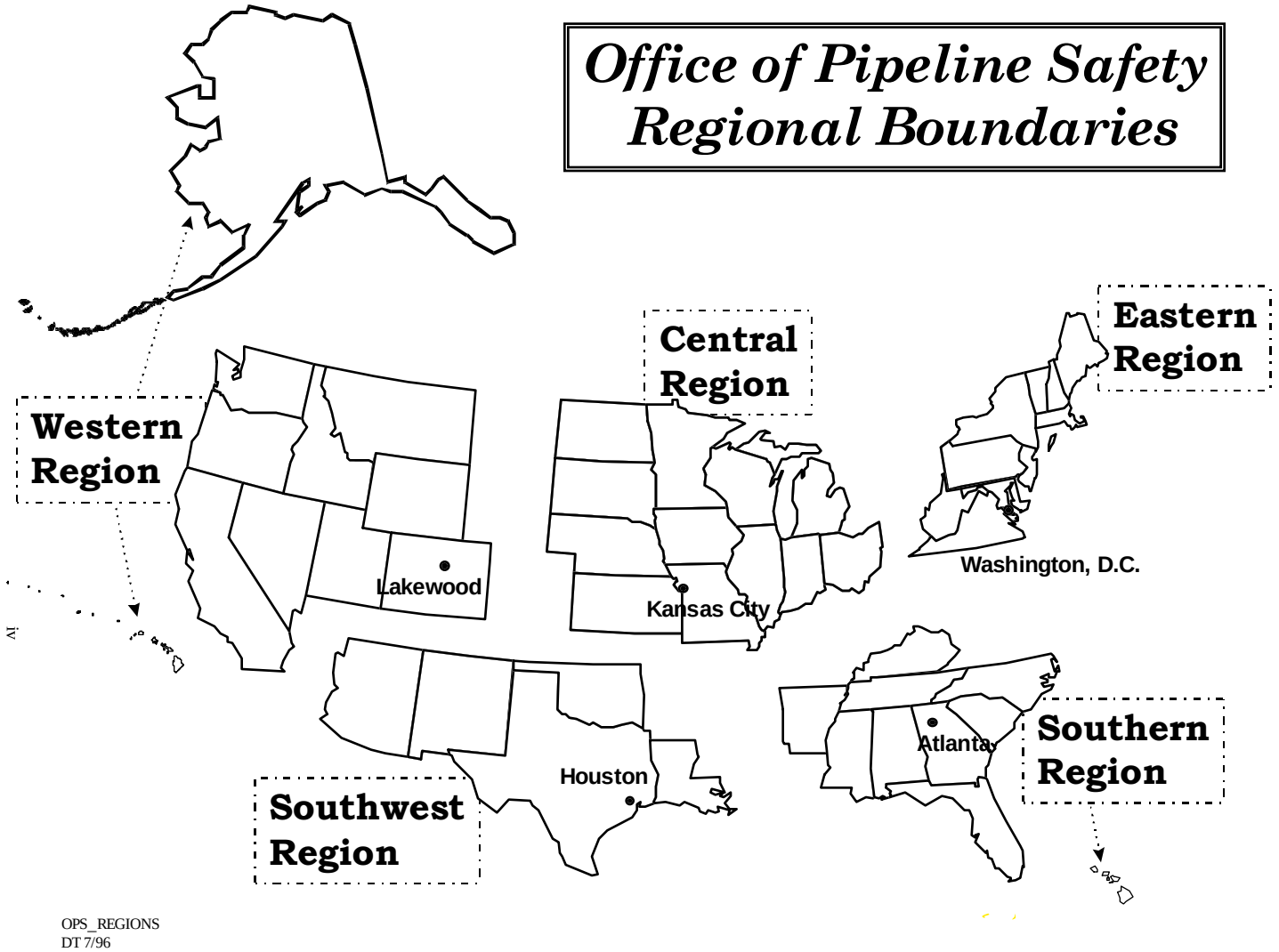
The Department's regulatory authority covers approximately 1.7 million miles of natural gas pipelines managed by almost 900 transmission and gathering operators, more than 1,400 distribution operators, 106 liquefied natural gas (LNG) operators, about 52,000 master meter operators, as well as 165,845 miles of hazardous liquid pipelines managed by 213 operators and 2,200 miles of carbon dioxide pipelines.

Section 7005 of the Consolidated Omnibus Budget Reconciliation Act of 1985 (Pub. L. 99-272, 49 U.S.C. App. § 1682a) authorizes the Secretary of Transportation to assess and collect annual fees from the pipeline industry to fund the cost of the Department's pipeline safety program under NGPSA and HLPSA.

Title IV of the Oil Pollution Act of 1990 (OPA 90), Pub. L. 101-380, 104 Stat. 484, requires national planning and response system for oil spills. The Office of Pipeline Safety (OPS) is responsible for implementing OPA 90 requirements as they apply to onshore oil pipelines that could reasonably be expected to cause significant and substantial harm to the environment by discharging oil into or on the navigable waters of the United States and adjoining shorelines.

The Department's pipeline safety mandate is administered, under delegation from the Secretary, by the Research and Special Programs Administration (RSPA) through the OPS. The functions of the Department's Agency Authorized Officer (AAO) for the Alaska Natural Gas Transportation System project are also assigned to OPS. Under the organizational structure established by Executive Order 12142 ("The Alaska Natural Gas Transportation System"), the AAO represents the Department within the Office of the Federal Inspector, and is responsible for monitoring and expediting all project-related activities that fall within the purview of the Department.

At the end of 1993, OPS had approximately 65 employees. Half of these employees work at Headquarters in Washington, DC, and the other half are located in five Regional Offices across the country (Eastern Region--Washington, DC; Southern Region--Atlanta, GA; Central Region--Kansas City, MO; Southwest Region--Houston, TX; Western Region--Lakewood, CO) and at RSPA's training facility, TSI, in Oklahoma City, OK (see regional boundary map below).



PROGRAM HIGHLIGHTS AND DIRECTION

In 1993, the Work Redesign of OPS continued to be implemented. In addition, work continued in establishing a methodology for risk assessment. OPS published an interim final rule for onshore oil spill response plans to be submitted by operators under the OPA 90. And finally, OPS began work to implement the mandates in the Pipeline Safety Act of 1992 (PSA 92).

Work Redesign. The Work Redesign effort to restructure and establish new work procedures and tasks continued to be implemented. The decentralization of OPS continued with additional responsibility placed with the Regions following the successful delegation of many responsibilities last year. Additional authority for review, processing, and signature of enforcement cases and state program monitoring documents was delegated to the Regional Directors. Some of the improved and more efficient areas of Regional responsibilities that were introduced last year that have been improved include accident investigations, safety inspections, inter-regional inspections, and office procedures.

At OPS Headquarters, employees began to use the manual for human resource development. The manual provides policy and procedures for awards, training, orientation of new staff, job announcements, and individual development programs.

The incorporation of new information system software was accelerated during 1993. Last year's successful introduction of Lotus Notes led to more efficient and productive work in OPS. The interactive features of Lotus Notes have proven to be a boon to the review and approval of documents. All of the Regions were successfully tied together into the OPS Local Area Network thereby electronically tying the geographically dispersed Regions and Headquarters. This has provided OPS the capability of sharing and reviewing documents by everyone in the organization.

Noteworthy in the new work paradigm are the heightened efforts at increasing coordination with other Federal agencies, the states and the pipeline industry in future programmatic initiatives. Such agencies as the U.S. Coast Guard, Minerals Management Service of the Department of the Interior, Federal Energy Regulatory Commission, National Oceanic and Atmospheric Administration, Environmental Protection Administration, and many other agencies joined RSPA in discussions regarding regulations and the Risk Assessment Prioritization (RAP) process. The National Association of Pipeline Safety Representatives (NAPSR) was instrumental in helping RSPA develop the RAP process and in discussions regarding the many legislative mandates in PSA 92.

Risk Assessment. To provide a basis for allocating government resources to areas that have the greatest potential to improve pipeline safety, OPS began last year to develop a RAP process. This year, work continued on this important effort by getting input from pipeline operators, the public, and other government and state agencies. The RAP process was improved from information and recommendations obtained from all of these sources.

In addition, discussions were begun to possibly develop risk methodology into the OPS regulatory program by establishing a structure to evaluate pipeline risks and their consequences, to develop solutions to address the risks, and to establish priorities for implementing the solutions. These discussions were held with pipeline operators that have risk management programs, risk management experts, and pipeline industry associations.

Environmental Action Plan. The PSA 92 gave the Department responsibility to protect the environment from pipeline spills. As a result of PSA 92, RSPA embarked on an Environmental Action Plan that included the prioritization of mandated regulatory requirements, such as: (1) hydrostatic testing of hazardous liquid pipelines that have not been previously tested; (2) requiring periodic in-

spection of pipelines in environmentally sensitive and high-density population areas using instrumented internal inspection devices; (3) not excepting a hazardous liquid pipeline from regulation solely because it operates at low internal stress; and (4) requiring liquid operators to have a damage prevention program. Another feature of the Environmental Action Plan was analyzing various Geographic Information System (GIS) mapping alternatives and determining a strategy for creating reasonably accurate maps of pipelines. In addition, an important element was the redirection of the pipeline state and compliance program to: (1) increase state grants and state participation in the program; (2) focus on inspecting hazardous liquid pipelines and pipeline construction; (3) assign state liaison personnel to the Regions; and (4) increase inspector training. Finally, the Spill Response Planning program under OPA was initiated, as discussed below.

Hazardous Liquid Pipelines. In light of the environmental provisions and legislation targeting hazardous liquid pipelines in PSA 92, inspections of hazardous liquid pipelines were increased in 1993. In addition, work was begun to develop regulations and studies as required by PSA 92. Some of the mandates in the PSA 92 that focused on hazardous liquid pipelines are: establishing standards for the use of instrumented internal inspection devices; establishing standards for emergency flow restricting devices and the associated leak detection systems; identifying environmentally sensitive areas; establishing employee qualification; and not excepting low stress pipelines from the regulations.

Natural Gas Pipelines. The PSA 92 also mandates a number of initiatives to safeguard natural gas pipelines. Some of the most significant mandates include: prescribing circumstances for the installation of excess flow valves; advising customers of the proper maintenance of these excess flow valves; surveying customers regarding their views on who should maintain excess flow valves; and surveying operators to determine the extent to which they have plans for the safe management and replacement of cast iron pipelines. Work was initiated on most of these legislative requirements.

Spill Response Planning. Under OPA, the Department of Transportation is responsible for establishing procedures, methods and requirements for equipment to prevent and contain discharge of oil from vessels and transportation related facilities. The RSPA has responsibility to establish procedures and planning requirements to prevent discharges from and to contain oil and hazardous substances in pipelines. On January 5, 1993, OPS published its interim final rule for Response Plans for Onshore Oil Pipelines as 49 CFR Part 194 (58 FR 244). The rule addressed several critical areas of planning, including: economically and environmentally sensitive areas, response actions and strategies, integration of incident command structures, pre-approval of removal actions, training requirements, and drill and exercise requirements. More than 1,000 spill response plans were received by the required date of July 18, 1993. Review of these plans was begun immediately to meet the plan approval date of early 1995.

REGULATORY ACTIVITIES

OPS develops regulations to assure safety in design, construction, testing, operation, and maintenance of pipeline facilities and in the siting, construction, operation, and maintenance of pipeline facilities. Regulations are also issued to administer the LNG safety program and delineate requirements for onshore response plans. These regulations are published in 49 CFR: Part 190, Enforcement Procedures; Part 191, Natural Gas Reporting Requirements; Part 192, Natural Gas Pipelines; Part 193, Liquefied Natural Gas Facilities; Part 194, Response Plans for Onshore Oil Pipelines; Part 195, Hazardous Liquid Pipelines; Part 198, State Grants; and Part 199, Drug and Alcohol Testing.

To provide expert input during development of pipeline safety regulations, NGPSA and HLPSA established two pipeline safety advisory committees, the Technical Pipeline Safety Standards Committee and the Technical Hazardous Liquid Pipeline Safety Standards Committees. The Committees review proposed regulations for technical feasibility, reasonableness, and practicability. The Committees also provide advice to the Department on pipeline safety and environmental issues. Each Committee is comprised of 15 members: six from the public, five from government, and four from the pipeline industry. Committee members are widely respected pipeline safety or technical experts. Committee members as of December 31, 1993, are listed in Table 1 on page 9.

Proposed Rulemakings. In its continuing effort to improve and update existing regulations, RSPA issued the following Notices of Proposed Rulemaking (NPRMs) in 1993:

Transportation of a Hazardous Liquid in Pipelines Operating at 20 Percent or Less of Specified Minimum Yield Strength. [Docket PS-117, Notice 3; 58 FR 12213; March 3, 1993.] The Federal pipeline safety standards governing hazardous liquid pipelines do not apply to pipelines operated at a stress level of 20 percent or less of the specified minimum yield strength (SMYS) of the pipe. This notice proposed to revise the current exception and to apply the pipeline safety standards to certain pipelines operating at a stress level of 20 percent or less of SMYS. RSPA expects that this rulemaking will improve public safety and environmental protection by minimizing the possibility of accidents.

Excess Flow Valve Installation on Service Lines. [Docket PS-118; Notice 2; 58 FR 21524; April 24, 1993.] Excavators frequently sever or damage gas service lines, causing loss of life, injury, or property damage by fire and explosion. RSPA proposed to require the installation of excess flow valves (EFVs) on certain new and replaced gas service lines to improve safety and mitigate the consequences of service line incidents. EFVs shut off the flow of gas by automatically closing when a line is broken.

Final Rules. In its continuing effort to enhance pipeline safety, RSPA issued the following Final Rules in 1993:

Response Plans for Onshore Oil Pipelines. [Docket No. PS-130; FR 58 244; January 5, 1993.] This interim final rule established regulations requiring response plans for certain pipelines that transport oil. These regulations were mandated by the Federal Water Pollution Act, as amended by the OPA 90. The purpose of these requirements was to improve response capabilities and minimize the environmental impact of oil discharges from pipelines. Although RSPA issued an interim final rule, comments were invited and changes were made where appropriate to the rule.

Update of Standards Incorporated by Reference. [Docket PS-131; Amdt. 192-68, 193-8 & 195-48; 58 FR 14519; March 18, 1993.] This final rule updated existing references to voluntary specifications and standards to reflect more recent

editions of each document. Many currently referenced editions are outdated and some are out-of-print. This final rule enabled pipeline operators to utilize current technology, materials, and practices, thereby reducing costs and enhancing economic growth consistent with the President's goal of regulatory review.

Gas Detection and Monitoring in Compressor Station Buildings. [Docket PS-100; Amdt. 192-69; 58 FR 48460; September 16, 1993.] This final rule required that each compressor building in a gas pipeline compressor station have a fixed gas detection and alarm system by September 16, 1996, unless the building has at least 50 percent of its upright side area permanently open or is in an unattended field compressor station of 1,000 horsepower or less. The history of reported incidents at compressor stations shows a potential for leaking gas to accumulate, undetected, inside compressor buildings. The purpose of the gas detection and alarm systems is to detect mixtures of gas in air and warn persons before it becomes flammable.

Leakage Surveys on Distribution Lines Located Outside Business Districts. [Docket PS-123; Amdt. 192-70; 58 FR 54524; October 22, 1993.] This rule required operators of distribution lines located outside business districts to use leak detectors in required leakage surveys. This provides greater assurance that operators identify all hazardous leaks during required leak surveys. Also, the final rule assures that leakage survey data no more than three years old is used to evaluate lines for corrosion.

Requests for Information. RSPA often solicits public comment in an attempt to gain information on issues surrounding upcoming regulatory initiatives. RSPA issued the following request for information in 1993:

Office of Pipeline Safety: Risk Assessment Prioritization. [Docket PS-132; FR 58 51402; October 1, 1993.] RSPA implemented a RAP process to rank actions that could be taken by OPS according to their potential for reducing the risk of pipeline failures. The ranked list became the base upon which OPS management will decide how to commit limited resources to specific tasks. RSPA invited representatives of industry, government agencies, environmental organizations, and other members of the public to contribute information on causes of pipeline failures. The information was used in the RAP process.

Regulatory Review: Gas Pipeline Safety Standards; NAPSR Report on Recommendations for Revision of Gas Pipeline Safety Standards. [Docket PS-124; Notice 2; 58 FR 59431; November 9, 1993.] This document invited public comment on rulemaking proposals from NAPSR for the safety of natural and other gas pipelines. NAPSR is a non-profit organization of state gas pipeline safety directors, managers, inspectors, and technical personnel who serve to support, encourage, develop and enhance pipeline safety regulation.

The proposals resulted from a study NAPSR conducted, at the request of RSPA, of pipeline safety regulations which they considered unclear or difficult to enforce. Comments on the NAPSR study assisted RSPA in developing a position on the NAPSR recommendations.

Federal Waivers Under the Act. In circumstances where absolute compliance with a pipeline safety regulation would not be appropriate and where sufficient alternative safeguards to the public safety are implemented, RSPA, at its discretion, may grant an operator's petition for a waiver from the regulations applicable to interstate pipeline transportation. The following waivers have been granted:

March 15, 1993: P-90-1W [Notice 2] Transportation of Natural and Other Gas by Pipeline; Grant of Waiver. RSPA granted a waiver to Panhandle Eastern Corporation from compliance with the repair requirements of 49 CFR 192.713(a). Panhandle will install a proprietary composite reinforced (CR) sleeve material (Clock Spring™ manufactured by Clock Spring Company of North America [Clock Spring Company], Long Beach, CA) as a full encirclement wrapped sleeve for the repair of imperfections and damages in

steel pipe at six locations on its Line #2 in Fayette County, Ohio. Currently, under § 192.713(a), each imperfection or damage that impairs the serviceability of a segment of steel transmission line operating at or above 40 percent of specified minimum yield strength (SMYS) must be repaired by either cutting out the segment and replacing a cylindrical piece of pipe or by installing over the segment a full encirclement welded split sleeve.

December 14, 1993: P-92-2W [Notice 2] Transportation of Hazardous Liquids by Pipeline; Petition for Waiver. ARCO Oil and Gas Company petitioned RSPA for a waiver from compliance with 49 CFR 195.412(a), inspection of right-of-way and crossing under navigable waters. Section 194.412(a) requires inspection of surface conditions on or adjacent to each pipeline right-of-way at intervals not exceeding 3 weeks, but at least 26 times each calendar year. The petition applied to the Sheep Mountain Unit gathering system, a 6.9 mile carbon dioxide pipeline system in Colorado.

State Waivers: A state agency certified under NGPSA or HLPSA may waive compliance with a safety regulation applicable to intrastate pipeline transportation, if, after receiving notice, RSPA concurs in the action. RSPA approved the following petitions for state waivers in 1993:

February 11, 1993: RSPA approved a waiver granted by the New Hampshire Public Utilities Commission to Northern Utilities, Inc. The waiver of 49 CFR Part 193 permitted the use of a mobile LNG facility in Rochester, New Hampshire, for the purposes of preventing extreme pressure drops in a certain portion of the area's distribution system during "peak" usage times.

March 24, 1993: RSPA approved a waiver granted by the Arizona Corporation Commission to Southwest Gas Corporation. The waiver authorized the use of plastic mechanical fittings that are not covered by specifications listed in 49 CFR Part 192.

March 25, 1993: RSPA approved a waiver granted by the Michigan Public Service Commission to Consumers Powers Company. The waiver permitted the aboveground installation of a 4-inch plastic gas main in a 6-inch steel casing pipe across a bridge in Macomb County. OPS did not object because the waiver was not inconsistent with pipeline safety.

April 1, 1993: RSPA approved a waiver granted by the Washington Utilities and Transportation Commission to Washington Natural Gas Company, which waived the definition of "main" in 49 CFR 192.3. The waiver permitted no more than two adjoining residential-building customers to be supplied gas from a common pipeline without classifying that pipeline as a "main."

June 28, 1993: RSPA approved a waiver granted by the Georgia Public Service Commission to Anheuser Busch. The waiver of 49 CFR Part 192 permitted the use of a plastic gas pipeline under the I-75 highway. Based on the material, test, and construction data regarding the pipeline, it was determined that the pipeline can be used to safely transport gas, as long as it is operated and maintained under Part 192 standards.

July 30, 1993: RSPA approved a waiver granted by the Railroad Commission of Texas to Amerada Hess Corporation. The waiver of compliance with the plastic pipeline standards in 49 CFR 192.59, 192.147, 192.191, 192.281(a) and (d) (1), and 192.63 (a) (2) applies to two segments of a fiberglass gathering system, totaling 0.37 miles of pipeline, that is located in Seminole, Texas.

August 16, 1993: RSPA approved a waiver granted by the Missouri Public Service Commission from compliance with 49 CFR 192.321(a), plastic pipe in gas lines be installed above ground. The need for a waiver was caused by flooding and damage

to the gas line serving the cities of Hermann, Berger and New Haven, Missouri. The City installed approximately 2,000 feet of 2-inch polyethylene plastic pipe above ground level to provide temporary emergency service to the cities.

September 16, 1993: RSPA approved a waiver granted by the Connecticut Department of Public Utility Control to Connecticut Natural Gas Corporation, Southern Connecticut Gas Company, and Yankee Gas Service Company. Alternate safety requirements to Part 193 requirements were approved for mobile LNG facilities, because the alternate safety requirements would not be a danger to public safety.

December 3, 1993: RSPA approved a waiver granted by the Rhode Island Public Utilities Commission to Providence Gas Company. Alternate safety requirements to Part 193 requirements were approved for mobile LNG facilities because the alternate safety requirements would not be a danger to public safety.

Advisory Bulletins: RSPA uses Advisory Bulletins to inform affected pipeline operators and all Federal and state pipeline safety personnel of matters that have the potential of becoming safety and/or environmental risks. During 1993, RSPA issued the following Advisory Bulletins:

January 1, 1993: Advisory Bulletin ADB-93-01 informed Propane System Owners and Operators of the need to inform the public of possible hazards relating to snow accumulation on pipeline facilities, and to monitor the potential impact of snow accumulation of those facilities.

April 5, 1993: Advisory Bulletin ADB-93-02 directed gas pipeline facility owners and operators to review and assess their § 192.615(d) continuing educational programs as applied to customers and the public.

July 29, 1993: Advisory Bulletin ADB-93-03 advised pipeline operators in flood areas of measures they should consider to assure the safety of those pipelines. In particular, pipeline operators should review emergency plans to assure that they adequately cover conditions possible in the current severe flooding.

November 16, 1993: Advisory Bulletin ADB-93-04 requested that persons seeking interpretations of pipeline safety regulations include certain information.

Table 1

Membership Roster: Technical Pipeline Safety Standards Committee

Membership: (G) = Government; (I) = Industry; (P) = Public
(NOTE: As of 12/31/93, there were five vacancies)

Bruce B. Ellsworth (G)
Commissioner
New Hampshire Public Utilities Commission
8 Old Suncook Road
Concord, NH 03301

William R. Harper (I)
Consultant
4334 Wood Trace
Owensboro, KY 42303

Jack M. Hilliard (I)
Manager
City of Florence Gas Department
PO Box 2818
Florence, AL 35631

Vincent R. Holley (P)
132 Cherokee Road
Hendersonville, TN 37075

Melvin A. Judah (P)
Consulting Engineer
560 N Street, SW., Apt . N-204
Washington, DC 20024

Ruth K. Kretschmer (G)
Commissioner
Illinois Commerce Commission
State of Illinois Center
100 West Randolph Street
Chicago, IL 60601

Darrell A. McKown (G)
Manager, Gas Pipeline Safety Section
West Virginia Public Service Commission
PO Box 812
Charleston, WV 25323

Richard J. Morgan (I)
Assistant Vice President
Steam Operations
Consolidated Edison Co. of New York, Inc.
708 First Avenue, 8th Floor
New York, NY 10017

Jack M. Webb (P)
Attorney at Law
5847 San Felipe
Suite 2300
Houston, TX 77057

Chris M. Zerby (G)
Environmental Engineer
Office of Pipeline and Producer Regulation
Federal Energy Regulatory Commission
825 North Capitol Street, NE., Room 7312-K
Washington, DC 20426

Membership Roster: Technical Hazardous Liquid Pipeline Safety Standards Committee

Membership: (G) = Government; (I) = Industry; (P) = Public
(NOTE: As of 12/31/93, there were seven vacancies)

Carl D. Clay (I)
Director, Transportation and Logistics
Marathon Oil Company
539 South Main Street
Findlay, OH 45840

Joan A. Jennings (G)
Deputy Chief, Special Services and Pipeline Safety Division
California State Fire Marshal
7171 Bowling Drive, Suite 600
Sacramento, CA 95823

Wayne D. Perry (P)
Professor of Public Policy and Operations Research
The Institute of Public Policy
George Mason University
Pohick Module, Room 23
Fairfax, VA 22030-4444

Milton D. Randall (P)
Consulting Welding Engineer
12727 Campsite Trail
Cypress, TX 77429

Gerald D. Rhodes (G)
Senior Petroleum Engineer
Minerals Management Service
Department of the Interior
381 Elden Street
Herndon, VA 22070

Gary D. Robinson (P)
Vice President,
Energy Development
Ecology and Environment, Inc.
368 Pleasantview Drive
Lancaster, NY 14086

Gary A. Smith (G)
Chief, Safety
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Merril H. Werts (P)
Bank Consultant/
Board Chairman
Stockgrowers State Bank
1228 Miller Drive
Junction City, KS 66441

FEDERAL/STATE PARTNERSHIP

The Federal/state partnership is the cornerstone for assuring uniform implementation of the pipeline safety program nationwide. While the Federal Government is primarily responsible for developing, issuing, and enforcing minimum pipeline safety standards, Congress intended for states to take full and active safety jurisdiction over all intrastate pipelines. States clearly are at the front lines in delivering the pipeline safety program, being closer to the pipeline operators and the consumers of pipeline products than the Federal Government. Alone, neither the Federal Government nor the states can assure the proper level of pipeline safety in the country today. Together, Federal and state resources can be leveraged to deliver a cost-effective program that has one of the best safety records in transportation. Refer to Table 3 on page 12 for a list of states participating in the Federal/state partnership program.

Natural Gas Pipeline Safety Program. NGPSA provides for a state agency to assume all aspects of the pipeline safety program for intrastate facilities under its jurisdiction if the state agency certifies annually that it complies with certain provisions. A state agency must adopt and enforce Federal safety standards established under the NGPSA. The state must inspect pipeline operations on a periodic basis to ensure compliance with the regulations. The state must also have authority to require pipeline operators to maintain records, make reports, and file plans for inspection and maintenance. Additionally, the state must have injunctive and monetary sanctions substantially the same as provided under the NGPSA.

The NGPSA also permits a state agency that does not qualify for certification to undertake certain safety activities under an agreement with the Department, principally conducting periodic inspection of pipeline operators. The state must also establish procedures for approval of operator plans for inspection and maintenance and must maintain records and reports to assure pipeline operator compliance with Federal safety standards. In the event of a probable violation of the standards, the state must notify the Department, which initiates any enforcement action. If a state agency does not submit a certification or seek an agreement, all intrastate facilities within the state, and any category of intrastate facility not covered by a state certification or agreement, remain under the Department's safety jurisdiction.

Under the NGPSA, the Department may also allow a state to act as its agent and inspect interstate pipelines traversing the state. To qualify as an agent, a state must demonstrate it is satisfactorily performing all responsibilities assigned under its certification for oversight of intrastate pipelines. Beginning January 1, 1995, the Department will require existing agents to have safety jurisdiction over all intrastate pipelines to remain interstate agents. As an agent, a state must notify the Department of any probable violation discovered, and the Department retains responsibility for taking appropriate enforcement action.

States have overwhelmingly supported the concept of common stewardship in gas pipeline safety. In 1993, 46 state agencies, the District of Columbia, and Puerto Rico held certifications, and 3 state agencies operated all or parts of their programs under agreements. Additionally, 11 state agencies acted as agents on behalf of the Department for inspecting interstate gas pipelines (see Table 3 on page 12). Three states did not participate in the program: Alaska, Idaho and South Dakota.

Each state agency participating in the pipeline safety program is eligible for grant funding of up to 50 percent of personnel, equipment, and activity costs associated with carrying out its program. The amount of funding available in any given year depends upon the congressional appropriations process. Since 1981, appropriations have not been adequate to cover state requests for grant funds, and the Department developed a formula to

allocate available funds to support state programs. Performance factors used for allocating funds in 1993 included: amount of state request; extent of state jurisdiction over intrastate operators; number and qualification of inspectors; number of inspection person-days; and existence of an underground utility damage prevention law.

In 1993, Congress appropriated $7,000,000 for pipeline safety grant funding. The Department allocated a total of $6,300,000 to state agencies participating in the gas program. Ninety percent of the appropriation was assigned to activities conducted under the NGPSA and 10 percent to activities conducted under the HLPSA (see Table 2). Funding in 1993 covered an average of 34 percent of overall state requests for grant funds to defray gas program costs.

Hazardous Liquid Pipeline Safety Program. The HLPSA provides for state participation in regulating the safety of pipelines transporting hazardous liquids under a certification or an agreementsubstantially the same as the NGPSA. At present, fewer states participate in the hazardous liquid program than in the gas program, reflecting the fact that the number of miles of liquid lines is significantly lower than the number of miles of gas lines. With enactment of the PSA 92 lifting the exception to regulating low-stress pipelines, the Department expects additional states to begin participating in the liquid program.

In 1993, a total of 10 state agencies participated in the hazardous liquid program -- nine state agencies held certifications and one state operated under an agreement. Furthermore, three of these states also acted as agents on behalf of the Department for inspecting interstate hazardous liquid lines (see Table 3 on page 12). In 1993, the Department allocated a total of $700,000 to state agencies

Table 2

Natural Gas Pipeline Safety Grant Allocation

State	$ Allocation	State	$ Allocation
Alabama	209,570	Nebraska	75,042
Arizona	227,804	Nevada	82,889
Arkansas	162,504	New Hampshire	47,241
California	232,989	New Jersey	171,799
Colorado	104,411	New Mexico	134,432
Connecticut	131,791	New York	314,665
Delaware	15,860	North Carolina	150,508
District of Columbia	41,892	North Dakota	32,659
Florida	36,406	Ohio	202,991
Georgia	172,170	Oklahoma	156,993
Illinois	187,464	Oregon	107,970
Indiana	135,523	Pennsylvania	184,199
Iowa	116,698	Puerto Rico	11,014
Kansas	199,164	Rhode Island	58,893
Kentucky	178,065	South Carolina	80,072
Louisiana	206,180	Tennessee	193,651
Maine	10,402	Texas	283,173
Maryland	99,417	Utah	93,033
Massachusetts	184,366	Vermont	48,709
Michigan	181,174	Virginia	126,298
Minnesota	222,727	West Virginia	116,333
Mississippi	103,438	Wisconsin	108,108
Missouri	181,072	Wyoming	89,749
Montana	25,492		

Subtotal	$6,237,000
State Travel Expenses	$63,000
Total	$6,300,000

Table 3

States Participating in the Federal/State Cooperative Gas and Hazardous Liquid Pipeline Safety Program in 1993

NATURAL GAS PROGRAM

STATE AGENCIES UNDER 5(a) CERTIFICATION (48)

Alabama	Iowa	Nebraska	Puerto Rico
Arizona	Kansas	Nevada	Rhode Island
Arkansas	Kentucky	New Hampshire	South Carolina
California	Louisiana	New Jersey	Tennessee
Colorado	Maine	New Mexico	Texas
Connecticut	Maryland	New York	Utah
District of Columbia	Massachusetts	North Carolina	Vermont
Florida (Public Service Commission)	Michigan	North Dakota	Virginia
Florida (State Treasurer - LP Gas Division)	Minnesota	Ohio	Washington
Georgia	Mississippi	Oklahoma	West Virginia
Illinois	Missouri	Oregon	Wisconsin
Indiana	Montana	Pennsylvania	Wyoming

STATE AGENCIES UNDER 5(b) AGREEMENT (3)

Delaware	Kentucky (Municipals)	Wyoming (Intrastate Transmission Lines)

STATE AGENCIES ACTING AS INTERSTATE AGENTS (11)

Arizona	Michigan	Ohio	West Virginia
Connecticut	Minnesota	Rhode Island	Rhode Island
Iowa	Nevada	Utah	

HAZARDOUS LIQUID PROGRAM

STATE AGENCIES UNDER 205(a) CERTIFICATION (9)

Alabama	Louisiana	Oklahoma
Arizona	Minnesota	Texas
California (Fire Marshal)	New York	West Virginia

STATE AGENCY UNDER 205(b) AGREEMENT (1)

Mississippi

STATE AGENCIES ACTING AS INTERSTATE AGENTS (3)

Arizona	California (Fire Marshal)	Minnesota

Table 4

1993 Hazardous Liquid Pipeline Safety Grant Allocation

State	$ Allocation	State	$ Allocation
Alabama	18,739	Mississippi	2,775
Arizona	37,300	New York	22,389
California (FM)	272,599	Oklahoma	66,947
Louisiana	49,091	Texas	125,336
Minnesota	84,558	West Virginia	13,266

Subtotal	$693,000
State Travel Expenses	$7,000
Total	$700,000

participating in the liquid program, covering an average of 30 percent of state costs. This level represented an increase over 1992 funding which covered an average of 22 percent of state costs (see Table 4 above).

State Pipeline Safety Personnel. One of the major state uses of Federal grant funds is for defraying personnel costs. As of December 31, 1993, the states reported a nationwide complement of 259 safety inspectors (working 218 person years) in the gas program and 70 inspectors (working 15 person years) in the liquid program (see Table 5 on pages 14-15).

Twenty percent of the gas inspectors have engineering degrees from accredited engineering schools or are registered professional engineers, and have a minimum of three years experience as state or Federal pipeline inspectors monitoring gas or liquid operators for compliance with state and Federal pipeline safety regulations. In addition, they have completed all the applicable TSI training (or received an exemption) (see Table 6 on pages 17-18).

Improving State Program Performance. The Department is committed to moving toward full 50 percent funding of eligible state program costs on a phased basis, tied to improved state performance. Initially, in distributing funds, the Department placed emphasis on assisting states to establish their pipeline safety programs. The Department has shifted attention to assisting states to enhance program performance. A state's performance would be based on the results of RSPA's annual field evaluation (assessing operating practices; quality of state inspections; investigations and enforcement actions; and adequacy of record keeping) and selected information provided in the state's annual certification/agreement (extent of safety jurisdiction; inspector qualifications; number of inspection person-days; and adoption of applicable regulations).

Two critical performance factors are state

Table 5

1993 State Natural Gas Pipeline Safety Personnel

State	Supervisory		Technical		Clerical	
	Number	Person Yrs.	Number	Person Yrs.	Number	Person Yrs.
AL PSC	1	0.97	9	7.58	1	0.97
AR PSC	1	1.00	4	4.00	1	0.675
AZ CC	3	1.51	11	9.42	2	1.50
CA PUC	6	1.08	14	9.25	3	2.10
CO PUC	1	0.50	3	3.00	2	0.80
CT DPUC	2	0.45	3	1.25	1	0.20
DC PSC	1	0.12	2	1.30	1	0.10
DE PSC	1	0.10	1	0.40	2	0.05
FL PSC	1	0.50	6	3.68	1	0.50
FL LPG	3	0.10	4	1.36	5	0.26
GA PSC	2	1.70	6	4.63	1	1.00
IA DC	1	0.40	5	2.98	0	0.00
IL CC	2	1.15	7	6.83	1	1.00
IN PSC	1	1.00	4	3.83	0	0.00
KS CC	1	1.00	9	8.58	1	1.00
KY PSC	2	1.75	4	3.25	1	0.75
LA DNR	3	1.86	13	8.46	3	1.25
MA DPU	1	1.00	5	4.75	2	2.00
MD PSC	2	0.70	4	3.06	1	1.00
MI PSC	2	1.11	4	3.46	1	0.54
MN OPS	2	1.25	8	5.34	3	1.88
MO PSC	2	1.14	9	6.75	1	0.54
MS PSC	1	0.99	3	2.99	1	0.99
MT PSC	1	0.13	2	0.54	1	0.106
NC UC	1	1.00	3	2.58	1	1.00
ND PSC	1	0.21	2	0.73	2	0.09
NE SFM	1	0.50	2	2.00	1	0.50
NH PUC	1	0.60	2	1.25	1	1.00
NJ BRC	4	1.60	4	3.50	1	1.00
NM SCC	2	1.33	3	3.00	1	0.09
NV PSC	2	0.125	3	2.04	2	0.10
NY PSC	6	5.65	21	33.58	4	3.50
OH PUC	3	1.30	7	6.42	4	1.00
OK CC	1	0.67	4	4.00	1	0.67
OR PUC	2	0.18	3	2.35	1	0.35
PA PUC	1	0.50	6	5.50	1	0.92

Table 5 (continued)

State	Supervisory		Technical		Clerical	
	Number	Person Yrs.	Number	Person Yrs.	Number	Person Yrs.
SC PSC	2	0.80	3	2.80	1	0.80
TN PSC	1	0.90	5	4.10	1	1.00
TX RC	10	4.76	31	22.16	13	11.05
UT DBR	2	1.10	2	2.00	1	0.50
VA SCC	2	0.406	4	2.95	3	0.15
VT DPS	1	0.20	1	0.80	0	0.00
WA UTC	1	0.20	1	1.00	1	0.30
WI PSC	3	0.70	3	1.59	3	0.10
WV PSC	2	0.70	6	5.19	1	0.80
WY PSC	1	0.38	3	1.71	6	0.60
Total	93	45.32	259	217.94	86	44.73

1993 State Hazardous Liquid Pipeline Safety Personnel

State	Supervisory		Technical		Clerical	
	Number	Person Yrs.	Number	Person Yrs.	Number	Person Yrs.
AL PSC	1	0.03	7	0.19	1	0.03
AZ CC	1	0.01	5	0.90	0	0.00
CA SFM	3	2.00	7	5.58	4	3.00
LA DNR	2	0.37	2	1.85	2	0.90
MN OPS	2	0.42	4	1.45	3	0.63
MS PSC	1	0.10	1	0.001	1	0.10
NY PSC	1	0.05	9	0.46	2	0.02
OK CC	1	0.34	2	1.17	1	0.34
TX RC	10	0.84	31	3.91	13	1.95
WV PSC	2	0.15	2	0.21	1	0.20
TOTAL	24	4.31	70	15.72	28	7.17

assumption of safety jurisdiction over **all** intrastate pipelines and adoption of minimum one-call notification system requirements. Some state agencies have had difficulty in obtaining the necessary legislative authority to comply with these requirements. In several instances, RSPA staff has met with key state officials to increase awareness of the pipeline safety program and encourage assumption of additional jurisdiction and/or adoption of one-call requirements.

As a result of increasing emphasis, a number of states have taken steps to expand their jurisdiction over intrastate pipelines, including municipal, master meter, and LPG systems. By the end of 1993, states reported they had jurisdiction over a total of 11,574 gas operators with 13,179 pipeline inspection units and 288 liquid operators with 438

pipeline inspection units (see Table 7 on pages 19-20).

A number of states strengthened their damage prevention programs during 1993 to comply with minimum Federal requirements for one-call notification systems. Outside force damage is the leading cause of pipeline safety accidents--accounting for 53 percent of gas distribution, 40 percent of gas transmission and gathering, and 18 percent of hazardous liquid incidents reported to RSPA in 1993. One-call systems serve as critical switching centers for excavators to notify pipeline and other underground facility operators of their intent to use equipment for digging, tunneling, demolition, or similar work. Congress explicitly prescribed the minimum requirements for establishing and operating one-call notification systems in the Pipeline Safety Reauthorization Act of 1988, including:

- complete coverage of areas in state having pipeline facilities;
- compliance with operating requirements (system management, recordkeeping, etc.);
- excavator notification to one-call system of intent to dig;
- intrastate pipeline operator participation in one-call system;
- pipeline operator response to notices of intended excavation activity (e.g., marking location of pipeline);
- notification of excavators and public availability and use of one-call system; and
- authority to enforce sanctions for violation of one-call requirements.

NARUC/NAPSR. The Department coordinates closely with the National Association of Regulatory Utility Commissioners (NARUC) and the National Association of Pipeline Safety Representatives (NAPSR). These two organizations, representing state interests in pipeline safety matters, hold meetings during the year and adopt resolutions to surface pipeline safety concerns of national significance.

NARUC is an organization of governmental agencies engaged in the regulation of utilities spanning the areas of communication, electricity, energy, gas and oil, and motor carriers. The objective of NARUC is to serve the consumer interest by seeking to improve the quality and effectiveness of public regulation in America. NARUC, through its Staff Subcommittee on Pipeline Safety under the Committee on Gas, provides RSPA a two-way communication channel with state public utility commissioners (or their equivalents) and state pipeline safety program managers. In 1993, the Subcommittee proposed and NARUC resolved that excess flow valves should not be required by Federal statute or regulations but left to the discretion of each state.

NAPSR is an organization of state gas pipeline safety program managers, inspectors, and technical personnel who support and work to enhance pipeline safety. Each year, NAPSR holds national and regional meetings to promote information exchange and innovative approaches for implementing the pipeline safety program. During 1993, NAPSR submitted resolutions petitioning RSPA to exempt liquefied petroleum gas (LPG) operators from Part 199 drug testing requirements; provide guidance on compliance with Part 198 one-call notification system requirements; develop refresher training for state and Federal safety inspectors; and publish Federal guidance on the staffing formula NAPSR developed for estimating an adequate, base-level number of state safety inspectors.

NAPSR, from time to time, establishes working

Table 6

1993 Natural Gas State Inspector Qualifications

STATE	CAT I	CAT II	CAT III	CAT IV	CAT V	TOTAL
AL PSC	0	8	1	0	0	9
AR PSC	0	4	0	0	0	4
AZ CC	0	11	0	0	0	11
CA PUC	5	0	9	0	0	14
CO PUC	2	0	1	0	0	3
CT DPUC	1	0	2	0	0	3
DC PSC	0	1	1	0	0	2
DE PSC	1	0	0	0	0	1
FL PSC	0	4	1	1	0	6
FL LPG	0	2	2	0	0	4
GA PSC	0	3	0	2	1	6
IA DC	2	3	0	0	0	5
IL CC	0	7	0	0	0	7
IN PSC	0	3	1	0	0	4
KS CC	2	6	1	0	0	9
KY PSC	0	4	0	0	0	4
LA DNR	0	13	0	0	0	13
MA DPU	0	4	1	0	0	5
MD PSC	1	1	1	1	0	4
MI PSC	4	0	0	0	0	4
MN OPS	4	3	1	0	0	8
MO PSC	3	4	2	0	0	9
MS PSC	0	1	1	1	0	3
MT PSC	0	1	1	0	0	2
NC UC	0	1	0	1	1	3
ND PSC	0	1	1	0	0	2
NE SFM	0	0	2	0	0	2
NH PUC	1	0	1	0	0	2
NJ BRC	2	0	2	0	0	4
NM SCC	2	1	0	0	0	3
NV PSC	1	0	2	0	0	3
NY PSC	0	16	2	3	0	21
OH PUC	1	5	1	0	0	7
OK CC	0	3	1	0	0	4
OR PUC	0	2	1	0	0	3
PA PUC	2	3	1	0	0	6
PR PSC	0	1	0	0	2	3

Table 6 (continued)

STATE	CAT I	CAT II	CAT III	CAT IV	CAT V	TOTAL
RI PUC	0	0	0	0	2	2
SC PSC	0	3	0	0	0	3
TN PSC	3	1	1	0	0	5
TX RC	8	9	7	6	1	31
UT DBR	0	1	1	0	0	2
VA SCC	3	1	0	0	0	4
VT DPS	0	1	0	0	0	1
WA UTC	0	1	0	0	0	1
WI PSC	2	0	1	0	0	3
WV PSC	0	5	0	1	0	6
WY PSC	3	0	0	0	0	3
TOTAL	53	138	50	16	7	264

1993 Hazardous Liquid State Inspector Qualifications

STATE	CAT I	CAT II	CAT III	CAT IV	CAT V	TOTAL
AL PSC	0	6	1	0	0	7
AZ CC	0	5	0	0	0	5
CA SFM	1	3	1	2	0	7
LA DNR	0	2	0	0	0	2
MN OPS	2	2	0	0	0	4
MS PSC	0	0	1	0	0	1
NY PSC	0	8	1	0	0	9
OK CC	0	2	0	0	0	2
TX RC	8	9	7	6	1	31
WV PSC	0	2	0	0	0	2
TOTAL	11	39	11	8	1	70

CATEGORY:

- I — Have engineering degrees from accredited engineering schools or are registered professional engineers, and have a minimum of 3 years' experience with gas or liquid pipelines or the enforcement of pipeline safety regulations at state or Federal level In addition, have completed all applicable training at TSI or received an exemption.
- II — Have engineering degrees from accredited engineering schools, are registered professional engineers, or have a minimum of 5 years experience as state or Federal pipeline inspectors monitoring gas or liquid operators for compliance with state and Federal pipeline safety regulations. Have completed all applicable TSI training, or have 10 years experience and have completed half the applicable training.
- III — Have college degrees or minimum of 5 years' experience in gas or liquid pipelines.
- IV — Have less than 5 years' experience as state pipeline inspectors.
- V — Have less than 1 year experience as state pipeline inspector.

Table 7

1993 State Agency Inspection Activity - Natural Gas

STATE	OPERATOR (S)	OPERATORS INSPECTED	INSPECTION UNITS	INSPECTION UNITS INSPECTED	INSPECTORS	PERSON YEARS	INSPECTIONS MADE PER-SON DAYS	PROBABLE VIOLATIONS	COMPLIANCE ACTIONS TAKEN	INCIDENTS LISTED ON CERT/AGR.
AL PSC	232	232	310	310	9	7.58	1,135	171	107	4
AR PSC	443	109	666	263	4	4.00	395	217	93	1
AZ CC	1,284	815	1,308	839	11	9.42	1,595	2,886	53	3
CA PUC	3,864	607	3,001	700	14	9.25	1,088	2,229	524	17
CO PUC	111	95	167	139	3	3.00	324	140	35	3
CT DPUC	9	9	32	32	3	1.25	197	51	11	6
DC PSC	1	1	5	5	2	1.30	193	3	3	3
DE PSC	11	11	15	15	1	0.40	85	2	2	0
FL PSC	61	56	79	73	6	3.68	568	71	37	4
FL LPG	81	81	376	345	4	1.36	378	389	58	0
GA PSC	221	189	263	223	6	4.63	733	59	20	1
IA DC	64	33	104	44	5	2.98	457	232	37	3
IL CC	120	90	86	139	7	6.83	581	207	62	4
IN PSC	103	103	185	162	4	3.83	512	39	20	8
KS CC	207	207	251	235	9	8.58	960	1,071	195	0
KY PSC	220	89	262	97	4	3.25	345	344	74	8
LA DNR	417	356	495	412	13	8.46	1,093	395	103	20
MA DPU	15	15	43	32	5	4.75	686	36	4	2
MD PSC	94	94	107	107	4	3.06	274	223	65	6
MI PSC	41	38	105	102	4	3.46	371	20	20	1
MN OPS	48	48	67	63	8	5.34	455	392	63	1
MO PSC	63	56	140	115	9	6.75	515	205	53	8
MS PSC	157	135	201	177	3	2.99	375	145	15	1
MT PSC	23	23	35	33	2	0.54	64	39	0	5
NC UC	39	39	87	88	3	2.58	396	131	60	0
ND PSC	25	25	30	30	2	0.73	125	26	14	0
NE SFM	26	21	52	36	2	2.00	171	80	13	0
NH PUC	8	7	15	10	2	1.25	60	15	5	1
NJ BRC	4	4	28	28	4	3.50	485	27	2	8
NM SCC	282	214	350	275	3	3.00	267	166	84	2
NV PSC	46	18	56	20	3	2.04	208	44	4	2
NY PSC	34	27	106	88	21	33.58	3,612	1,023	201	2
OH PUC	312	72	445	128	7	6.42	810	60	26	4
OK CC	182	105	250	142	4	4.00	420	964	141	4
OR PUC	13	13	19	19	3	2.35	210	636	31	0
PA PUC	43	43	133	133	6	5.50	782	371	73	8
PR PSC	1	1	2	2	3	1.25	92	3	0	0

Table 7 (continued)

STATE	OPERATOR (S)	OPERATORS INSPECTED	INSPECTION UNITS	INSPECTION UNITS INSPECTED	INSPECTORS	PERSON YEARS	INSPECTIONS MADE PERSON DAYS	PROBABLE VIOLATIONS	COMPLIANCE ACTIONS TAKEN	INCIDENTS LISTED ON CERT/AGR.
RI PUC	14	7	19	12	2	1.01	209	8	8	1
SC PSC	32	32	44	44	3	2.80	489	300	70	1
TN PSC	189	189	209	208	5	4.10	454	373	114	0
TX RC	1,555	759	1,983	1,039	31	22.16	2561	3,660	744	14
UT DBR	537	150	573	157	2	2.00	240	138	37	0
VA SCC	9	9	31	31	4	2.95	332	20	14	2
VT DPS	40	26	40	17	1	0.80	98	15	5	0
WA UTC	25	13	43	20	1	1.00	87	157	2	1
WI PSC	15	15	61	26	3	1.59	89	113	13	1
WV PSC	204	113	230	137	6	5.19	630	16	6	11
WY PSC	49	36	70	38	3	1.71	149	25	25	1
Total	11,574	5,430	13,179	7,390	264	220.20	26,355	17,937	3,346	172

1993 State Agency Inspection Activities - Hazardous Liquid

STATE	OPER-ATOR (S)	OPERATORS INSPECTED	INSPECTION UNITS	INSPECTION UNITS INSPECTED	INSPEC-TORS	PERSON YEARS	INSPECTIONS MADE PER-SON DAYS	PROBABLE VIOLATIONS	COMPLIANCE ACTIONS TAKEN	INCIDENTS LISTED ON CERT/AGR.
AL PSC	3	3	3	3	7	0.19	22	1	1	0
AZ CC	6	6	7	7	5	0.90	107	7	3	1
CA SFM	84	53	111	78	7	5.58	496	100	25	9
LA DNR	31	31	43	41	2	1.85	175	237	19	1
MN OPS	8	8	17	12	4	1.45	145	35	1	2
MS PSC	2	2	2	2	1	0.001	7	5	0	0
NY PSC	4	2	4	2	9	0.46	32	1	1	0
OK CC	11	11	21	12	2	1.17	122	126	14	5
TX RC	138	97	229	152	31	3.91	383	333	91	4
WV PSC	1	1	1	1	2	0.21	21	0	0	0
TOTAL	288	214	438	310	70	15.72	1,510	845	155	22

Some of these inspectors also inspect gas pipeline operators and are also counted in the complement of 264 gas inspectors.

committees to tackle particular problems or undertake projects where RSPA wants state input. During the year, the NAPSR Liaison Committee completed a review of Part 192 to identify regulations that need to be more explicit, understandable, and enforceable. The committee's final report targets the 20 highest priority issues requiring revision from the state perspective. RSPA plans to publish the report in the Federal Register seeking public comment on the proposed changes.

The Over/Under Estimating Committee met in 1992 to continue its assessment of the disparity between state estimated and actual year-end program costs (excessive "carryover" grant funds had been flagged as a problem by the Secretary's Safety Review Task Force in 1989). The committee found progress had been made in reducing excessive estimates and will meet again in two years to see if any additional measures need to be instituted. During the year, the Grant Allocation Committee also met to discuss changes to performance factors used in the grant allocation formula.

Achieving operator compliance with the pipeline

COMPLIANCE

safety regulations is critical to preventing accidents. Accordingly, RSPA has increased emphasis on those components of the overall pipeline safety programs which contribute significantly to compliance, including operator inspections, compliance actions, state oversight, and accident investigations. The five pipeline safety Regional Offices constitute the backbone of RSPA's compliance efforts. Our continued efforts to decentralize allow RSPA to be more responsive to operational problems. This leads to improved regional/operator relations, more efficient utilization of resources, and ready availability of expertise to address unique state/regional safety and environmental concerns.

Risk-Based Pipeline Inspection Plan. The most fundamental way to achieve compliance is through periodic inspection of pipeline operations. RSPA regional staff inspect interstate gas and hazardous liquid pipeline systems, as well as the intrastate facilities under direct Federal jurisdiction, such as certain municipal and master meter gas systems that are not regulated by a state agency, or intrastate gas and liquid facilities in states where a state agency is not participating in the program.

RSPA continued to use its risk-based pipeline inspection plan for scheduling unit inspections prioritized by risk. In determining the priority of inspections, RSPA considers existing safety problems; population density; known environmental sensitivity of unit areas; results of past inspections; analysis of safety-related condition reports filed by operator; length of time since last inspection; and Pipeline Inspection Priority Program (PIPP) rankings.

PIPP rankings are based upon operator-supplied information such as proportion of pipeline without corrosion protection, leak repair history, and pipeline material (cast iron pipe and poly vinyl chloride (PVC) and acrylonitrile-butadiene-styrene (ABS) plastic pipe present greater risk). PIPP rankings also reflect RSPA inspection results and enforcement actions.

The risk-based inspection plan enables Regional Offices to allocate their limited inspection resources based on risk. It also has built-in flexibility which allows RSPA to devote more time to such critical activities as new construction follow-up, drug testing inspections, and additional accident investigations.

Inspection Activity. In 1993, RSPA's regional staff expended a total of 809 person-days inspecting 180 natural gas and 162 hazardous liquid inspection units (see Table 8 on page 23).

Compliance Actions. RSPA has various compliance actions available to address a probable violation of the pipeline safety regulations. These actions, depending on the circumstances, range from issuing a warning letter to issuing a hazardous facility order requiring immediate suspension of operations or restricted use of a facility.

In 1993, RSPA opened 179 compliance actions, referenced in Appendices A and C, with proposed civil penalties recommending assessments totaling $1,217,300 against gas and hazardous liquid pipeline operators found to be in violation of the pipeline safety regulations.

In 1993, final disposition of 73 Compliance Progress Files (CPFs), one decision on a petition of reconsideration, and two amendments to hazardous facility orders resulted in three consent orders, seven hazardous facility orders, and 57 civil penalties assessing a total of $748,150 for violations of the pipeline safety regulations.

In 1993, RSPA closed 143 CPFs referenced in Appendix B and collected penalties totaling $462,000.

Accident Investigations and State Oversight.

Table 8

1993 Inspection and Compliance Profile

Inspection Profile		
Program	# Inspection Units Inspected	Person Days Spent on Inspections
OPS Hazardous Liquid	162	394
OPS Natural Gas	180	415
State Hazardous Liquid	310	1,510
State Natural Gas	7,371	26,266

Compliance Actions Taken					
Program	**Compliance** Action Initiated	Compliance Orders Issued	Hazardous Facility Orders Issued	Penalties Collected No.	Penalties Collected Amount
OPS Hazardous Liquid	78	18	5	57	$748,150
Liquid/Gas Penalties Combined					
OPS Natural Gas	94	22	2		
State Hazardous Liquid	155	N/A	N/A	9	$95,500
State Natural Gas	3,346	N/A	N/A	29	$418,410

Detail of State Penalty Data								
State	**Penalties Collected**		**State**	**Penalties Collected**		**State**	**Penalties Collected**	
	#	$ AMT.		#	$ AMT.		#	$ AMT.
California *	8	95,000	Maryland	2	30,000	Ohio	4	165,460
Colorado	2	30,500	Massachusetts	8	140,250	Pennsylvania	1	1,200
Louisiana	3	3,500	Minnesota	5	14,000	Tennessee	2	23,000
Louisiana *	1	500	Missouri	1	10,000	Texas	1	500
						Total	38	513,910

* Liquid

RSPA staff investigate selected pipeline accidents to determine if the regulations have been violated and whether revisions or additions to the regulations are needed. During 1993, RSPA staff expended 352 person-days conducting 49 accident investigations and following up on 10 public complaints.

In addition to inspecting interstate pipeline operators, RSPA regional staff also oversee the intrastate natural gas and hazardous liquid pipeline safety programs of state agencies participating in the Federal/State program, as well as the programs of those state agencies acting as agents for RSPA to inspect interstate operators.

The requirements and criteria for reporting gas

pipeline incidents are contained in 49 CFR Part 191. Subpart B of Part 195 includes regulations for reporting hazardous liquid pipeline accidents. These regulations define damage thresholds, exclusions, time requirements, and reporting methods. RSPA maintains data reported by pipeline operators on incidents and accidents in the Integrated Pipeline Information System (IPIS). IPIS is the primary tool for storing, retrieving, and analyzing pipeline safety data. IPIS provides operational and statistical information necessary to perform failure and cost-benefit analyses and various other studies supporting rulemaking, enforcement, and research.

Table 9

1993 Natural Gas Transmission and Gathering Pipeline Incidents Reported by Cause

Cause	Incidents	Property Damage	Fatalities	Injuries
Construction/Material Defect	15	$6,704,834	0	1
Damage by Outside Forces	36	$9,335,558	0	2
External Corrosion	9	$1,400,876	0	1
Internal Corrosion	6	$1,657,000	0	0
Other	30	$3,937,000	1	14
Total	96	$23,035,268	1	18

Natural Gas Pipeline Incident Data. Criteria for the submission of written incident reports by natural gas distribution, transmission, and gathering operators were revised, effective July 1, 1984. This revision requires reports on all incidents, regardless of the size of the operator, involving a release of gas and either: (1) a death or personal injury necessitating in-patient hospitalization, or (2) estimated property damage of $50,000 or more. Reports are not required for master meter systems or LNG facilities.

During 1993, natural gas transmission and gathering pipeline operators reported 96 incidents, involving one fatality, 18 injuries, and $23,035,268 of property damage (see Table 9). Natural gas distribution pipeline operators reported 121 incidents, resulting in 16 fatalities, 84 injuries, and $15,346,655 of property damage (see Table 10). Of the 217 total gas incidents, 109 (50 percent) were attributed to damage by outside forces. This is an increase from 1992, when 48 percent of all gas incidents were caused by outside force damage.

Total gas failures, fatalities, and injuries that

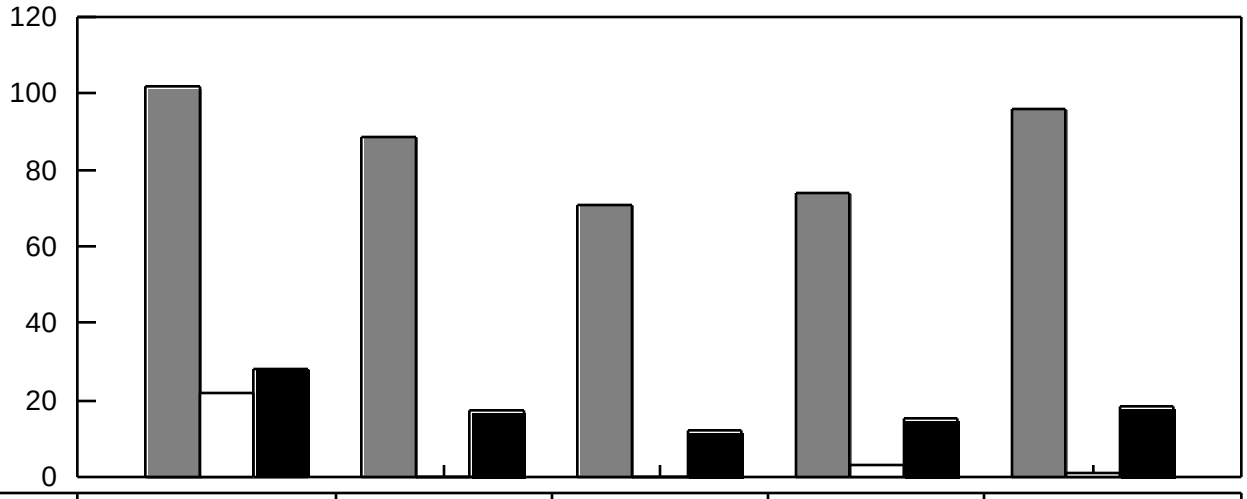
Table 10

1993 Natural Gas Distribution Pipeline Incidents Reported by Cause

Cause	Incidents	Property Damage	Fatalities	Injuries
Accidently Caused by Operator	9	$117,000	0	9
Construction/Material Defect	8	$701,000	0	6
Damage by Outside Forces	73	$11,490,555	11	35
External Corrosion	7	$195,100	2	10
Internal Corrosion	0	$0	0	0
Other	24	$2,843,000	3	24
Total	121	$15,346,655	16	84

Table 11

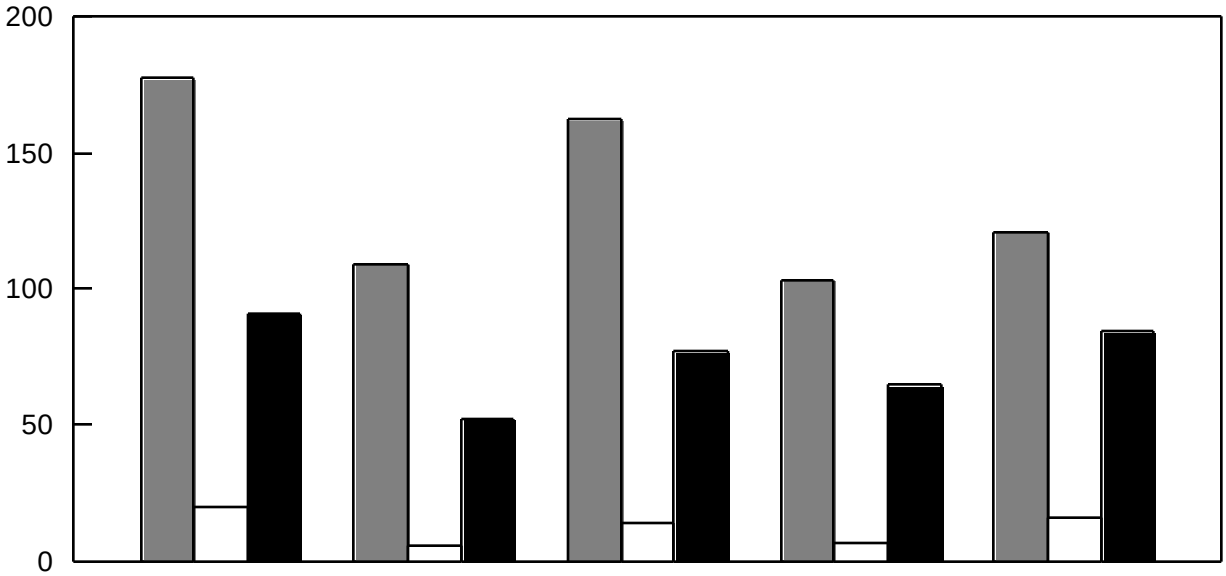
Summary of Natural Gas Transmission & Gathering Pipeline Failures, Fatalities, and Injuries (1989-1993)



Year	1989	1990	1991	1992	1993
Failures	102	89	71	74	96
Fatalities	22	0	0	3	1
Injuries	28	17	12	15	18

Table 12

Summary of Natural Gas Distribution Pipeline Failures, Fatalities, and Injuries (1989-1993)



Year	1989	1990	1991	1992	1993
Failures	177	109	162	103	121
Fatalities	20	6	14	7	16
Injuries	91	52	77	65	84

occurred in 1993 reflect the average of the preceding four years (217) (see Tables 11 and 12 on page 25).

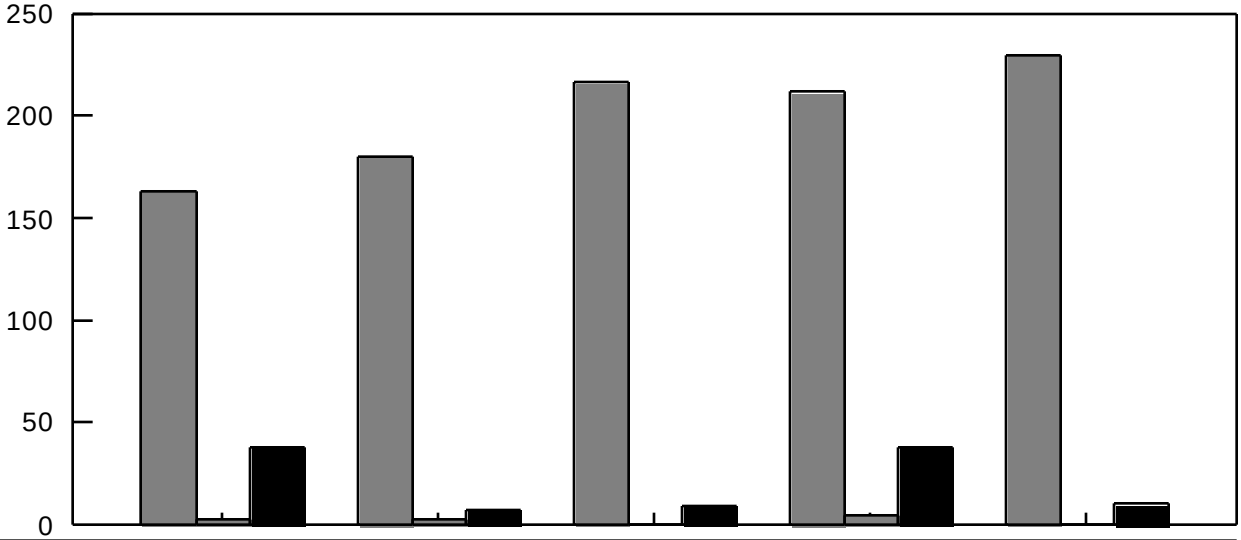
Hazardous Liquid Pipeline Accident Data. On October 21, 1985, the accident reporting requirements for hazardous liquid pipeline operators were revised to include interstate and intrastate operators. The definition of a reportable accident for hazardous liquids was not affected by this revision i.e., a release of hazardous liquid transported and either: (1) an explosion or fire not intentionally set by the operator, (2) loss of 50 or more barrels of product, (3) escape to the atmosphere of more than five barrels a day of highly volatile liquid (HVL), (4) death or bodily harm to any person, or (5) estimated property damage exceeding $50,000. During 1993, hazardous liquid pipeline operators reported a total of 230 accidents, resulting in no fatalities, 10 injuries, $28,873,651 of property damage, and a release of 119,002 barrels of product. Of the 230 hazardous liquid accidents, 59 (25 percent) were attributed to damage by outside forces (see Table 14 on page 27) and 55 (24 percent) were attributed to corrosion (external and internal).

Hazardous liquid accidents were somewhat higher in 1993 than the average of the preceding four years (230 vs. 193). Fatalities and injuries registered a decrease in 1993 over the average of the preceding four years (3 vs. 0 and 23 vs. 10, respectively) (see Table 13 below). Crude oil, the commodity spilled most often, accounted for 37 percent of all reported hazardous liquid accidents but caused 25 percent of all property damage associated with those accidents (see Table 15 on page 27).

Economic Impact of Accidents. RSPA converts

Table 13

Summary of Hazardous Liquid Pipeline Failures, Fatalities, and Injuries (1989-1993)



Year	1989	1990	1991	1992	1993
Failures	163	180	216	212	230
Fatalities	3	3	0	5	0
Injuries	38	7	9	38	10

Table 14
Hazardous Liquid Pipeline Accidents Reported by Cause

Cause	Accidents	Barrels Lost	Property Damage	Fatalities	Injuries
Equipment Malfunction	17	6,915	$580,200	0	0
External Corrosion	41	3,498	$2,996,820	0	0
Failed Pipe	10	7,277	$1,923,000	0	0
Failed Weld	7	8,497	$3,252,054	0	0
Incorrect Operation	15	19,271	$731,445	0	4
Internal Corrosion	14	1,455	$123,428	0	0
Other	67	27,140	$4,741,055	0	5
Outside Force Damage	59	44,949	$14,525,649	0	1
Total	230	119,002	$28,873,651	0	10

accident data to a common denominator for purposes of preparing cost-benefit justifications in rulemakings and for assessing risk. The economic impact of injuries, fatalities, and barrels of product spilled is calculated using a dollar equivalent--$450,000 is used for each injury, $2,500,000 for each fatality, and $25 for each barrel of product spilled. These dollar equivalents for injuries and fatalities are based on a Department analysis of economic studies of the "willingness-to-pay" concept. Property damage is shown at the dollar level reported by the pipeline operator. Based on these dollar equivalents, the 217 natural gas and 230 hazardous liquid pipeline accidents reported to RSPA in 1993 accounted for a combined economic impact of $144,494,274 in injuries, fatalities, product spilled, and property damage (see Table 16 on page 28).

Accidents of Interest. Of the pipeline accidents for which written reports were submitted to the Department in 1993, some are of particular interest given environmental implications, extent of property damage, or cause of accident.

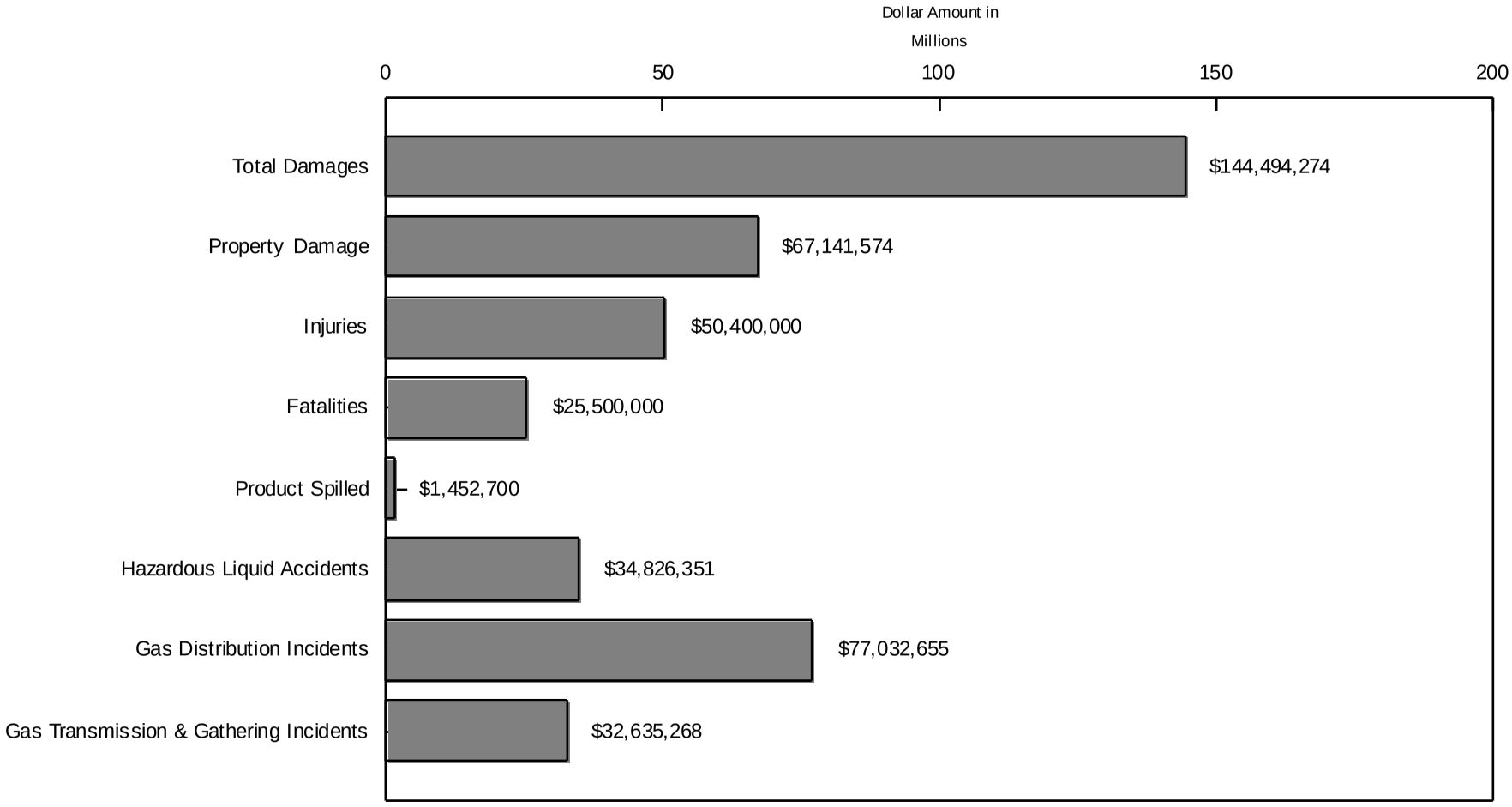
Unusually heavy snowfall accumulations

Table 15
Summary of Liquid Pipeline Accidents Reported by Commodity

Commodity	# Incidents	% of Total	Barrels Lost	Property Damage	% of Total	Fatalities	Injuries
Anhydrous Ammonia	5	2.17	12,458	$424,376	1.47	0	6
Condensate	1	0.43	50	$983,000	3.4	0	0
Crude Oil	86	37.39	45,100	$7,315,318	25.34	0	2
Diesel Fuel	15	6.52	3,548	$1,626,500	5.63	0	0
Fuel Oil	14	6.09	12,172	$10,670,000	36.95	0	0
Gasoline	59	35.65	26,339	$5,177,095	17.93	0	0
Jet Fuel	9	3.91	865	$165,977	0.57	0	0
Kerosene	3	1.3	76	$58,600	0.2	0	0
L.P.G.	13	5.65	10,816	$276,821	0.96	0	2
Natural Gas Liquid	7	3.04	5,669	$142,482	0.49	0	0
Oil and Gasoline	7	3.04	396	$401,000	1.39	0	0
Turbine Fuel	1	0.43	5	$20,000	0.07	0	0
Various Petrol Prod	3	1.3	1,040	$49,500	0.17	0	0
Not Given	7	3.04	468	$1,562,982	5.41	0	10
Total	230	99.96	119,002	$28,873,651	99.98	0	10

Table 16

1993 Economic Impact of Pipeline Accidents *



*Conversion factor for calculating economic impact: $450,000 per injury; $2,500,000 per death; $25 per barrel of product spilled (hazardous liquid only).

precipitated five propane incidents in California. On January 18, an explosion and fire occurred at the Pine Tree Apartments in Chester, CA. It was determined that snow/ice shoveled from the roof of the Pine Tree Apartments damaged the propane meter set, allowing propane to migrate into a crawl space below the apartment. In addition to one fatality and nine injuries, significant property damage was reported. It was determined that the operator, Amerigas, did not have adequate procedures or appropriately trained employees, to respond to a leak, a complaint, or an emergency.

On January 20, 1993, two persons were killed and five injured when an explosion and fire occurred at the Sun Meadows II condominium in Kirkwood, CA. Significant structural damage prevented determination of the exact cause of the explosion, but it is believed that snow may have slid off of the sloped roof onto the meter set, damaging it.

Three other propane incidents, involving non-jurisdictional facilities, were noted by the OPS. To reduce the possibility of further snow related incidents, OPS issued a Pipeline Safety Advisory ADB-93-01 (Snow Accumulation of Gas Pipeline Facilities - 58 FR 7034; February 3, 1993).

On March 28, 1993, Colonial Pipeline Company experienced a release of 8,000 barrels of diesel fuel on its 36-inch products pipeline, near Reston, VA. The released product entered the Sugarland Run, a tributary to the Potomac River. Approximately 7,392 barrels of product were recovered by a series of containment barriers. An unknown amount of product entered the Potomac River, resulting in the closure of the Fairfax County water intake. This section of the pipeline transports products from Chantilly, VA to Dorsey Junction, MD and carries approximately 28 percent of all products shipped to the northeastern states. Approximately 41 local residents voluntarily evacuated their homes. Third party excavation damage from prior years is believed to have precipitated the failure.

The OPS assisted the New Jersey Board of Regulatory Commissioners and the National Transportation Safety Board (NTSB) in their June 10 investigation of an Aberdeen Township, NJ incident. Three fatalities and three serious injuries occurred after a New Jersey natural gas contractor struck a service line during construction of a new gas main. Upon realizing he had struck a gas service line, the contractor excavated and repaired the line where it had pulled away from the main. After an explosion consumed a nearby house, a second failure on the service line was discovered. It was determined that gas migrated from the second failure site into the lower level of the house, providing fuel for the subsequent explosion and fire.

Assistance was given to the District of Columbia and the NTSB during investigation of a June 28, Washington, D.C. incident. The incident, which resulted in one fatality and four injuries, occurred when gas ignited from a leaking 12-inch cast iron pipe. Evidence at the site indicates that installation of a light pole located inches from the Washington Gas Light Company main may have damaged the cast iron pipe.

Three fatalities and twelve injuries occurred in St. Paul, MN, after sewer workers struck a plastic natural gas service line. The explosion and fire, which caused significant property damage to nearby structures, occurred approximately twenty minutes after a backhoe operator struck the pipeline. The OPS assisted the Minnesota Office of Pipeline Safety and the NTSB in the investigation of the July 22 explosion.

On August 14, 1993, Columbia Gas Transmission's 12-inch bare steel pipeline ruptured near the airport at Binghamton, NY. The cause of the failure was corrosion. While there were no fatalities or injuries, one home was totally destroyed. RSPA and the New York Public Service Commission, acting as an interstate agent, investigated the integrity of this line under the authority of a Hazardous Facility Order.

On August 24, 1993, Columbia Gulf Transmission

Company's 24-inch looped natural gas line crossing the Mississippi River ruptured. There were no casualties and the line was isolated with the closure of automatic valves. Delivery of gas was not affected since multiple line crossings are in the area. A boat was reported to have been observed "stationary" in the river, indicating the possibility an anchor may have been involved. At the time of the incident, there was high water in this region making it impossible to assess the damage.

On August 30, 1993, company forces, while investigating an anomaly shown on the Vetco Smart Pig log, discovered a leak on a 40-inch line near Pineville, Louisiana. The line was flowing gasoline at 100 psig. The leak occurred in a dent with a 2-inch crack at the 8 o'clock position on the pipe. It was not feasible to cut out the damaged pipe so the line was repaired using a weldover sleeve and returned to service on August 31.

On September 18 and on November 4, 1993, Columbia Gas Transmission experienced ruptures due to internal corrosion in drips on storage field lines associated with two separate storage fields. No fatalities or injuries resulted, but gas was released in both incidents and ignited into large fireballs. As a result of these incidents, RSPA issued a Hazardous Facility Order to Columbia. The order required Columbia to test and analyze fluids from all 11 storage fields in West Virginia. Based on the analysis, Columbia initiated short and long-term remedial actions. Columbia has revised their operating and maintenance procedures relating to internal corrosion on a company-wide basis. The West Virginia Public Service Commission, acting as an interstate agent, ensured that the terms of the Hazardous Facility Order were carried out.

A special investigation of CNG Transmission Company was initiated on June 28, 1993, because the OPS Eastern Region and the West Virginia Public Service Commission found probable violations pertaining to corrosion control in various CNG inspection units. A specialized comprehensive evaluation of CNG's corrosion records was made on a company-wide basis. Two interstate agents, Ohio and West Virginia, assisted the Eastern Region. The OPS Central Region coordinated with the Ohio Public Utility Commission. The investigation resulted in violations and a civil penalty of $130,000.

On November 15, 1993, Transcontinental Gas Pipe Line Corporation's (Transco) Line A, a 30-inch gas transmission pipeline, experienced a blow-out approximately 17 miles downstream of their El Campo, Texas, main line compressor station. The failure occurred at an estimated pressure of 740 psig. The blowing gas was ignited by an unknown source. The failure occurred in an open field; there were no fatalities, injuries, or property damages other than an area scorched by the fire. The failed section was isolated, including offshore Texas Gulf of Mexico gas production that the pipeline was transporting.

On December 11, 1993, vapors from natural gas condensate, released during liquid removal operations, ignited. The resulting combustion caused injuries which required the hospitalization of two Transco employees and one Fescue (Transco contractor) employee. Following the ignition, valves at the separator were immediately closed to halt the pipeline liquid removal operation. Secondary fires were then extinguished. Local emergency services personnel arrived at the site and all injured personnel were evacuated by helicopter. The five frac tanks (portable, non-pressurized, steel storage tanks) were emptied and all remaining natural gas condensate was trucked to a processing plant near Pearsall, Texas.

NTSB Safety Recommendations. On December

15, 1993, NTSB issued a formal safety recommendation (P-93-009) following an April 7, 1992, release of HVLs from a salt dome storage cavern in the Seminole Pipeline system near Brenham, Texas. Three fatalities, 21 injuries, and over nine million dollars of property damage resulted from the incident. NTSB recommended that the RSPA develop safety requirements for storage of highly volatile liquids (HVLs) and natural gas in underground facilities, including a requirement that all pipeline operators perform safety analyses of new and existing underground geologic storage systems to identify potential failure. Additionally, NTSB recommended that a determination be made as to the likelihood that each failure will occur; assess the feasibility of reducing the risk of failure; and require that operators incorporate all feasible improvements.