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Good afternoon. My name is Lois Epstein, and I am a licensed engineer with the Environmental Defense Fund in Washington, DC. EDF is a non-profit environmental research and advocacy organization with nearly 300,000 members nationwide. Previous to EDF, I worked as an environmental consultant for two firms, and for the U.S. Environmental Protection Agency. Since 1995, I have been a member of the advisory committee which oversees the U.S. Department of Transportation Office of Pipeline Safety's work on pipelines transporting hazardous liquids such as crude oil and gasoline.[1]

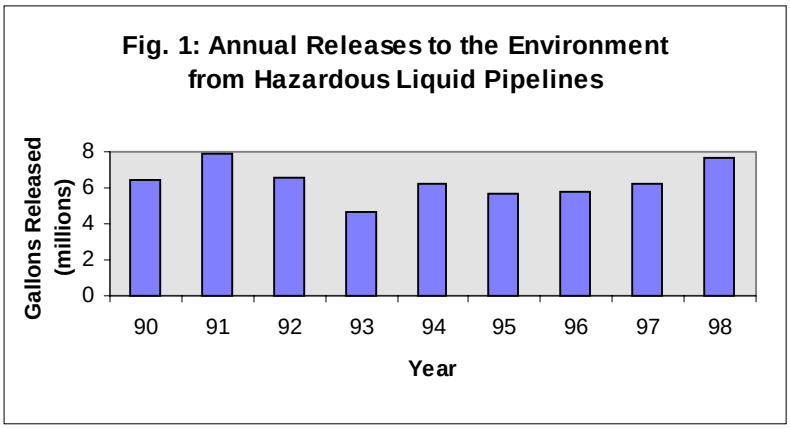
My testimony today is on behalf of EDF and its members. EDF also is a co-founder and member of the National Pipeline Reform Coalition, a newly-formed network of environmental organizations, local government, industry, and labor unions whose goal is to protect the environment, property, and public safety from releases from hazardous liquid and natural gas pipelines.

In my testimony, I will provide you with EDF's analysis of and views on:

1. the activities of the Office of Pipeline Safety (OPS) which impact the environment,
2. the existing pipeline safety law, and
3. recommendations for Congressional action.

The Office of Pipeline Safety's Record on the Environment

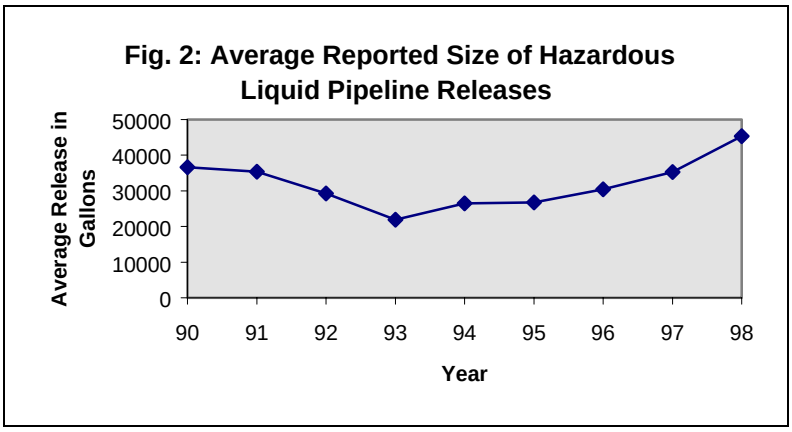
To begin, I refer you to Figure 1, which shows "Annual Releases to the Environment from Hazardous Liquid Pipelines" from 1990 through 1998 using OPS accident data. These data show that over 6.3 million gallons of oil and other hazardous liquids are reported released from pipelines on average each year,[2] more than half the amount released from the Exxon Valdez disaster. Note that Figure 1 shows that since 1995, the amount released to the environment has increased each year.



[1] The U.S. DOT's Technical Hazardous Liquid Pipeline Safety Standards Committee.

[2] The OPS accident database contains estimates of release size from those reporting the incidents. This database contains both under-reporting and over-reporting of accidents (the latter through redundant reports). Only releases of at least 2,100 gallons or at least $50,000 in property damage, or which cause a death or serious injury, are required to be reported (see 49 CFR 195.50 for more details).

Figure 2 shows that the amount of oil and other hazardous liquids released per incident has been increasing since 1993, indicating that releases may be becoming more serious over time. The average amount released in 1998 was over 45,000 gallons. Annual reporting in the 1990s ranges from 170 to 236 incidents per year, with an average of 200, meaning that there is a pipeline release of tens of thousands of gallons approximately every other day.



As hazardous liquid pipeline releases can and do contaminate drinking water supplies, crops, and residential lands, generate greenhouse gases, kill fish, and cause deaths and injuries from explosions and fires, these two upward trends in aggregate annual releases and release size clearly need to be reversed. The following table lists some of the most serious releases from hazardous liquid pipelines and their tank farms in recent years:

Company	**Date**	**Location**	**Gallons Released**	**Comments**
Shell Pipeline Corporation	April 1998	St. James, LA	748,000	Crude oil release at tank farm caused by operational problems.
All American Pipeline Company	December 1997	CA (city not reported to OPS' database)	540,000	Corrosion failure in pipeline.
Williams Pipeline Company	March 1997	Des Moines, IA	1.26 million	Gasoline leak(s) from corrosion at a pipeline-related tank farm, causing extensive property damage
Colonial, Exxon, Texaco, Valero	October 1996	Houston, TX	1.47 million	Pipelines broke under pressure from severe flooding, spilling oil into the San Jacinto River.
Koch Pipeline	August 1996	Lively, TX	Gaseous release from a liquid pipeline	Pressurized liquid butane escaped from a corroded section of the pipeline, killing two teenagers.
Colonial Pipeline	June 1996	Greenville, SC	957,600	Diesel fuel spilled into the Reedy River, killing 35,000 fish. Rupture caused by inadequate management controls and training.
Colonial Pipeline	March 1993	Reston, VA	408,000	Fuel spilled into Sugarland Run, a tributary of the Potomac River. Water supplies in the area were shut down for several days, accompanied by air pollution.

OPS data also show reported property damage from hazardous liquid pipeline releases averaged over $39 million in the 1990s, with an average property damage cost per incident of over $194,000 (median cost is $20,000). Based on an analysis by Battelle National Laboratory,[3] and EDF's analysis of OPS accident data for 1990-1998, it appears that no more than 20-30% of hazardous liquid pipeline releases are caused by "outside forces," or entities sometimes beyond the control of pipeline companies. The most common causes of releases from hazardous liquid pipelines are corrosion, operational incidents, and material defects.

While there undoubtedly are some pipeline companies that are effectively preventing releases and protecting the environment, there are others that are not, as shown by OPS accident data. This situation is analogous to the environmental protection efforts by non-transportation companies, e.g., petrochemical companies, in the 1960s, prior to passage of the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act in the 1970s. It took passage of these laws and subsequent development of regulations by the U.S. Environmental Protection Agency to ensure that laggard companies and plants met minimal levels of environmental protection. Just like those environmental laws, the Pipeline Safety Act of 1992 gave OPS the mandate to develop pipeline standards that protect the environment -- OPS has not, however, issued any environmental protection regulations to date.

Of particular significance and despite an October 1994 Congressional deadline, OPS has not even proposed a rule under section 60109 of the Pipeline Safety Act that identifies areas "unusually sensitive to environmental damage" if there is a hazardous liquid pipeline accident. OPS also was instructed by Congress to prescribe regulations by October 1995 requiring periodic inspections of pipeline infrastructure in such areas to ensure they have adequate integrity to continue operations. There is no excuse for OPS' complete failure to meet these deadlines.

Additionally, OPS has an extremely poor record of enforcing existing and developing new safety requirements. On the enforcement side, the OPS web-site shows that the civil penalties OPS proposes to collect in 1997 and 1998 are less than half what the office proposed to collect in 1994 ($0.5 million in 1997-8, down from $1.14 million in 1994). Because the penalties for violations and releases are likely to be so minimal, it frequently can be cheaper for pipeline companies to pay fines and cleanup costs than to prevent pollution.

As for developing new safety standards, based on its investigations of pipeline accidents, the National Transportation Safety Board (NTSB) has recommended, but OPS has not implemented, the following changes in its hazardous liquid pipelines program:[4]

- require hazardous liquid pipeline operators to assess the adequacy of their pipelines to operate at maximum allowable operating pressures *on a periodic basis* (emphasis added);
- revise hazardous liquid pipeline regulations to include criteria similar to the regulations in place for natural gas pipelines to evaluate the adequacy of cathodic protection (i.e., a common type of corrosion protection) systems – first recommended by NTSB in 1987 and again in 1998 after the deaths of two teenagers in Texas in 1996;
- modify the hazardous liquid pipeline accident data collected in a manner that would allow OPS to perform methodologically sound accident trend analyses and to evaluate pipeline operator performance using normalized accident data.

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[3] "Causes of Pipeline Incidents, Effect of the Aging Infrastructure On Incidents, and Areas of Technology Development," Robert J. Eiber, Battelle National Laboratory, published in the National Pipeline Safety Summit, Newark, New Jersey, June 20, 1994 proceedings, U.S. Department of Transportation, Office of Pipeline Safety.

[4] "Evaluation of Accident Data and Federal Oversight of Petroleum Product Pipelines," National Transportation Safety Board, NTSB/SIR-96/02, Adopted: January 23, 1996.

EDF research has identified several additional deficiencies in the OPS regulatory program which likely result in unnecessary environmental pollution. At a minimum, OPS needs to:

- establish performance standards for leak detection systems, so that each hazardous liquid pipeline utilizes adequate leak detection;
- address pipelines that transport liquefied gases (rather than the oil they previously carried), including notification to OPS and the public of the change in service and appropriate design and operating standards;
- require that pipeline breakout tanks, which store hazardous liquids and are an integral part of the transportation of hazardous liquids by pipelines, be designed and operated in a manner that prevents contamination of the environment (e.g., requiring corrosion protection for all breakout tanks and attached piping, double-bottoms for new breakout tanks to contain leaks, etc.);
- require reporting of spills or leaks of at least one barrel (42 gallons) rather than 50 barrels, releases where estimated property damages are at least $5,000 (as was true in the past) rather than $50,000, and leaks that pollute groundwater in addition to those that pollute surface water; and
- address the significant methane emissions from natural gas pipeline compressor stations, high-bleed pneumatic devices, pipeline maintenance, dehydrators, and fugitive emissions using existing technologies,[5] as methane is a strong greenhouse gas that contributes to climate change.

EDF research also has identified the Y2K computer and embedded chip problem as a significant issue for the pipeline industry. Gas and oil pipelines are highly computerized, with numerous embedded chips monitoring and controlling operations. Based on the latest data from a September 1998 governmental survey which includes responses from companies representing approximately 70% of oil pipeline deliveries, only 12-35% of the companies had completed Y2K compliance testing for their critical operations.

The Federal Pipeline Safety Law

EDF sees the need for four significant amendments to the current pipeline safety law:

1. Remove the state preemption language;
2. Require that OPS delegate enforcement for interstate pipelines to qualified state agencies;
3. Add release liability provisions; and,
4. Amend the citizen suit provisions to facilitate private enforcement actions.

First, because states differ in their environmental protection needs and because the regulatory and enforcement records of OPS are inadequate as discussed above, EDF sees an urgent need for a change in section 60104(c) of the pipeline safety law to allow states to exceed federal safety and environmental protection standards. Such a change would enable states to address their need for more stringent safety and environmental standards whenever appropriate (e.g., more closely spaced valves to protect certain areas, increased or different inspection requirements, etc.), and would make the pipeline statute consistent with an aspect of the major federal environmental protection laws that works quite well. Notably, the language used for such a change should ensure that state standards are "compatible" with federal pipeline safety and environmental protection standards (the statute now contains such language for intrastate pipelines), so as not to inhibit transportation at state boundaries in any way.

[5] "Opportunities to Reduce Anthropogenic Methane Emissions in the United States: Report to Congress," Office of Air and Radiation, EPA 430-R-93-012, October 1993.

Second, the current pipeline safety statute needs amendment to ensure that qualified state agencies become the federal government's "agents" to inspect and enforce regulations for interstate pipelines. Like the preemption issue, this change allows states to step in when they find the efforts of the federal government to be inadequate. I understand that the Subcommittee Chair will receive a letter for the hearing record on this topic from City Attorney James Pates of Fredericksburg, Virginia.

Third, EDF proposes that Congress add significant release liability provisions to the pipeline safety law, modeled on those in the Oil Pollution Act of 1990 (OPA), as a strong incentive to prevent releases and reduce their size. U.S. Environmental Protection Agency data show that spills over 200,000 gallons have been reduced by over 60% since OPA's enactment.[6]

Last, section 60121, "Actions by private persons," needs to be amended to facilitate private enforcement. First, section 60121 only allows citizens to file suit for violations of OPS requirements, not for posing "imminent and substantial endangerment to health or the environment," as is allowable under section 7002(a)(1)(B) of the Resource Conservation and Recovery Act of 1976 (RCRA). This change would enable those affected by pipeline releases to file suit even if the release occurred as a result of regulatory gaps. Second, section 60121 currently prevents citizens from proceeding with litigation if OPS is pursuing administrative proceedings, and should be amended to allow citizens to proceed unless OPS or the appropriate state authority "is diligently prosecuting a civil or criminal action *in a court* of the United States or a State" (emphasis added, from RCRA section 7002(b)(1)(B)), as environmental laws allow. Third, the statute should permit citizen plaintiffs to seek imposition of civil penalties on violators of requirements rather than merely injunctive relief, to increase the incentive for compliance.

As for implementation issues associated with the existing pipeline safety statute, EDF continues to have significant concerns with the risk management provisions in section 60126, and with the extraordinary cost-benefit analysis procedures added to the law when it was last re-authorized in 1996. The following subsections describe EDF's concerns.

<u>Risk Management Demonstration Projects</u>. Since enactment of the 1996 law, OPS has spent significant resources on the Risk Management Demonstration Project program, which come at the expense of OPS' other regulatory development and enforcement responsibilities. EDF also is concerned that the public gains little from this program because it (and all the involved states) are not part of the decision-making process and do not have access to the risk information identified by the companies involved. Additionally, OPS may be approving projects for companies that have less than adequate safety and environmental records, and OPS does not have a plan for how the lessons learned will translate to the industry as a whole. While it may be argued by the companies involved and OPS that the program is the best way to make company-specific regulatory decisions, without an enormous infusion of resources to OPS and the state pipeline agencies, such an individualized oversight program could not possibly be carried out for the over 3,000 operators of gas and hazardous liquid pipelines with their approximately 2 million miles of pipelines.

During the two year period of this program, OPS only has approved four of these projects and granted only one regulatory exemption. To the public, it appears that this program might be useful in building business-to-government relationships, but it in no way provides the public with additional information about pipeline risks, nor does it demonstrate problems with existing standards that need to be overcome through an individualized process. In fact, because companies can undertake nearly all these actions without the formal involvement of OPS (e.g., implementing environmental management systems), it is unclear why this program even needs to be part of the statute.

[6] "ERNS and OPA 90: Emergency Response Notification System (ERNS) Fact Sheet," Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, EPA 540-F-97-012, April 1997.

Cost-Benefit Analysis Procedures. Cost-benefit analysis is a limited and imperfect tool. Costs tend to be overstated and benefits understated for a variety of methodological reasons, and such analyses are very resource-intensive to conduct. In light of these problems, EDF has three specific and ongoing concerns with the provisions in the current law: 1) There is no dollar threshold in the law for regulatory costs under which these complex, uncertain, and time-consuming analyses do not have to be performed, thus providing limited benefit in some cases while using extensive OPS resources; 2) The statutory language places far too much weight on this inherently limited and uncertain process, requiring its use as a decision rule rather than as a decision tool. In other words, it requires that any new standard demonstrate that benefits justify costs, so each new regulation can be interminably litigated on these grounds; and 3) Despite EDF's efforts, OPS staff have not included language covering environmental benefits into any of its draft documents on performing cost-benefit analyses.

Recommendations for Congressional Action

Given the increasing trends for oil pipeline releases, OPS's excessive focus on Risk Management Demonstration projects at the expense of Congressionally-mandated regulatory development and enforcement, and the inability of states to act when the federal government fails in its responsibilities, EDF strongly urges Congress to:

1. Conduct an oversight hearing on OPS' performance, including how it compares to state performance on intrastate pipelines;
2. Request that the General Accounting Office study the resources OPS is devoting to risk management versus other activities, OPS' enforcement record compared to that of other federal regulatory agencies, OPS' actions with respect to National Transportation Safety Board recommendations compared to the actions of other transportation agencies to NTSB recommendations, and the ability of states now and in the future to take over some of OPS' current responsibilities.
3. Amend the pipeline safety law in the manner discussed in the previous section.

Thank you very much for inviting me to testify today. I hope this information proves helpful in your deliberations.