

CRS Report for Congress

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Pipeline Safety: Federal Program and Reauthorization Issues

Paul Rothberg
Specialist in Science and Technology
Resources, Science, and Industry Division

Hussein D. Hassan
Technical Information Specialist
Resources, Science, and Industry Division

Summary

The 107th Congress is considering legislation that would amend federal pipeline safety law, which directs the U.S. Secretary of Transportation to regulate pipeline transportation and storage of natural gases and hazardous liquids. Those bills also would authorize funding for the Office of Pipeline Safety (OPS) of the U.S. Department of Transportation (DOT), which is charged with implementing federal pipeline safety law. Among the topics discussed as part of the process of reauthorizing the OPS program are: qualification requirements for pipeline operators, integrity management of pipelines, funding amounts to support OPS and the grant programs it administers, state versus federal roles in pipeline safety, and increased community involvement in pipeline safety. The terrorists attacks of September 11, 2001 have placed increased emphasis on pipeline security. S. 235, as amended, the "Pipeline Safety Improvement Act of 2001," passed the Senate on February 8, 2001. Several pipeline safety/security reauthorization bills have been introduced in the House. This report will be updated as necessary.

Pipeline Industry and Its Safety Record

Natural gas, oil, gasoline, diesel fuel, and other industrial liquids play key roles in the Nation's economy. Over 3,000 natural gas operators and 52,000 master meter and liquefied natural gas (LNG) operators and over 200 hazardous liquid operators bring these products to market.¹ Transporting both gaseous and liquid materials safely through an intricate network of over 1,750,000 miles of pipeline is a complex undertaking.

¹ OPS web page: [<http://ops.dot.gov/init.htm>]. Master meter operators distribute gas service from a gas transmission or distribution line for resale to individual customers, such as owners of mobile homes in a trailer park.

Unremitting attention to safety is necessary given the hazardous nature of these materials, proximity of many pipelines to homes and businesses, and potential environmental impacts that could result from a spill. Although numerous actions intended to improve security have been taken by governmental entities and the pipeline industry, both oil and gas pipelines remain vulnerable to attacks by terrorists. Monitoring and other strategies are used to reduce the extent of any unintentional releases.

Over the 14 year period of 1986-1999, industry reported to the DOT that annually there were on average 23 fatalities, 113 injuries, and \$68 million in property damage as a result of 411 releases from pipelines during transportation.² DOT statistics indicate that excavation damage, by such third parties as construction companies and highway crews, is the major cause of pipeline accidents for natural gas transmission and distribution pipelines. Excavation damage is the second leading cause of accidents for hazardous liquid pipelines, after corrosion, according to DOT. Data collected by DOT indicate that property damages from excavation-caused releases varies year to year, but, this sum has exceeded \$20,000,000 per year since 1997. Other major causes of pipeline releases include material defects and pipeline operator errors. Significant releases from pipelines happen infrequently; however, when they occur, they attract much attention.

Office of Pipeline Safety (OPS)—Mission, Funding, and Activities

The Office of Pipeline Safety (OPS) of the DOT is charged with the responsibility to promote safe and environmentally sound operation of natural gas and hazardous liquid pipeline systems. OPS issues and enforces pipeline safety regulations, and provides training and technical assistance to state inspectors and industry. Two statutes provide the primary legal framework for the federal pipeline safety program. The Natural Gas Pipeline Safety Act (NGPSA) of 1968, as amended, authorizes the DOT to regulate pipeline transportation of various gases, including natural gas and LNG. Similarly, the Hazardous Liquid Pipeline Safety Act (HLPSA) of 1979, as amended, authorizes the Department to regulate pipeline transportation of hazardous liquids. These Acts have been recodified in 49 U.S.C. Chapter 60101 et seq.

Primarily based on these statutes, its own initiatives, and recommendations from the National Transportation Safety Board (NTSB), OPS issues the federal pipeline safety regulations, which set minimum standards on design safety, construction, inspection, testing, operation, emergency response, and maintenance of pipelines and associated facilities.³ To promote compliance with its safety standards, OPS uses a variety of strategies, including enforcement actions with civil penalties. OPS also conducts accident investigations and systemwide reviews designed to focus on high-risk operational or procedural problems and areas of the pipeline that transverse sensitive environmental areas or high-density populations. To improve its regulations, advance technologies and strengthen activities, OPS conducts research funded at about \$4.8 million per year.

The OPS program and the state grants administered by OPS are funded from two primary sources: the Pipeline Safety Fund and the Oil Spill Liability Trust Fund (OSLTF).

² [<http://ops.dot.gov/stats.htm>]. Most of the deaths and injuries resulted from natural gas releases, while most of the property damage was caused by hazardous liquid releases.

³ These are published in the *Code of Federal Regulations*, 49 CFR Parts 190-199.

In the annual DOT appropriations act, Congress specifies an amount of funding to be obtained from each of those sources. The Pipeline Safety Fund provides monies to pay most of the costs of the OPS program and associated grants. This fund is replenished each year by fees that OPS collects annually from gas transmission and liquid pipeline companies. The balance at the beginning of each budget cycle in that fund varies but has averaged around \$17.0 million in recent years. Monies obtained from the OSLTF are used only to pay for activities that OPS conducts to implement provisions of the Oil Pollution Act of 1990 (P.L. 102-508). The FY2002 DOT Appropriations Act, (P.L.107-87), made a total of \$58.250 million available for the pipeline safety program, including an appropriation of \$50.386 million from the pipeline safety fund, and \$7.864 million from the oil spill liability trust fund.

OPS has issued new safety standards requiring the implementation of integrity management programs that include continual assessment and evaluation, inspection or testing, data analysis, and followup repair as well as preventive or mitigative actions on pipeline segments transporting hazardous liquids that could affect high consequence areas. Those areas include populated areas, commercially navigable waters, and unusually sensitive areas, which are drinking water or ecological resource areas that are unusually sensitive to environmental damage from a hazardous liquid pipeline release. If an operator knows or it is reasonable to anticipate that there is a threat due to a terrorist activity, the operator must consider that risk in developing its integrity program, according to DOT. OPS may soon propose comparable regulations for gas pipeline segments.

OPS also works with industry to collect information on the location of pipelines in relationship to navigable waters and population centers. With the participation of industry and state and local officials, OPS conducts practice drills to help plan emergency responses to oil spills. One of the purposes of these exercises is to improve reaction capabilities and communications among the governmental and industry parties that respond or oversee the response to a spill. OPS seeks to help responders increase oil recovery rates, improve operator response readiness, and reduce environmental damages, and protect sensitive areas. These exercises also are useful in planning emergency response to a terrorist attack primarily against an oil pipeline system.

OPS promotes “Dig Safely,” which is a nationwide public education campaign conducted by OPS in conjunction with numerous groups to inform excavators, facility operators, public works employees, and the public about the importance of preventing damage to underground facilities and pipelines. This campaign encourages contact with “one-call” systems to help locate this infrastructure.⁴ To identify and validate best practices used to prevent damage to underground facilities, OPS, working with different groups, has completed a report entitled *Common Ground*.⁵

⁴ Upon request, these communication systems often notify facility operators that construction or digging will occur at a specific location. The facility operators (or their contractor) may then go to the site and mark the location of any of their underground facilities.

⁵ U.S. DOT. OPS. *Common Ground*. June 1999. 252 p., also see [<http://www.cycla.com/opsiswc/wc.dll?ocss~toppage>]. The study includes information on recommended practices regarding one-call notification systems and damage prevention of underground facilities. The best practices are recognized by 160 damage prevention experts as
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OPS also administers a grant program that supports state inspection of hazardous liquids and gas pipelines. In FY2001 that program, which underpins the federal/state partnership in pipeline safety, was funded at \$16.4 million.⁶ As part of the grant, OPS is authorized to reimburse a state agency for up to 50 percent of the costs to carry out its pipeline safety program.⁷ In the pipeline safety reauthorization bill, Congress historically has set authorized levels for the state grants.

Legislative Issues

The 107th Congress is considering legislation to amend pipeline safety law and reauthorize the OPS program. The reauthorization process provides an opportunity to review the OPS program and regulations affecting pipeline safety and to evaluate various options intended to improve those federal activities and standards. S. 235, as amended, the “Pipeline Safety Improvement Act of 2001,” passed the Senate on February 8, 2001. The Bush Administration, as well as the National Governors Association, supported Senate passage of S. 235; some Members and organizations, however, sought other provisions. Several pipeline safety/security bills have been introduced in the House. Illustrative key issues and options contained in various bills are discussed below.

Training/Qualification Issues. The NTSB, Congress, industry, and OPS have debated whether federal requirements for the training or qualification of pipeline operators are adequate. In August 1999 OPS issued a final rule that requires operators to develop and maintain a written program intended to ensure that individuals performing safety tasks are qualified.⁸ OPS does not require a formal test to be given and does not certify pipeline employees as to their qualifications. Some maintain that the OPS final rule is inadequate to ensure adequate training and testing of pipeline employees. S. 235, as amended would require a plan that would provide for training and periodic reexamination, as appropriate, to enhance personnel operating qualifications; authorizes certification of those plans; and allows for minimum standards for training and evaluation. In addition, the legislation required the Secretary to provide a report to the Congress evaluating the effectiveness of operator qualification and training. S. 235, as amended, authorizes the Secretary to establish the benchmark or criteria for evaluating and reporting on operator qualification and training.

H.R. 144 would require the DOT Secretary to carry out a pilot program for certifying specified individuals at three pipeline facilities. S. 299 and H.R. 459 would establish a qualification program similar to that would be established in S. 235, as amended, but those bills have some different features. Industry generally supports the OPS regulation and cites its investments in ensuring personnel competency and the adequacy of its safety

⁵ (...continued)

useful in helping to protect underground facilities, the public and the environment.

⁶ This amount does not include funds for risk management grants.

⁷ The amount of reimbursement that a state receives depends upon the amount appropriated for the grant program as well as the state’s performance as judged by OPS. This federal assistance helps ensure the continuity of state programs which inspect more than 90 percent of U.S. pipelines.

⁸ U.S. DOT. RSPA. *Pipeline Safety: Qualification of Pipeline Personnel*. Federal Register, August 27, 1999: 46865-46867.

systems. H.R. 3609 would require the DOT Secretary to require pipeline operators to ensure that their personnel who control product flow operations are qualified to conduct such operations. The bill would require the Secretary to issue uniform standards and criteria for such a qualification program that includes the establishment of an industry standard on the qualifications of personnel who control product flow operations.

Promoting the Integrity Management and Security of Pipelines. S. 235, as amended, would require the implementation of integrity management plans for interstate pipelines that traverse environmentally sensitive areas and high density population areas. Each operator's plan would need to be based on risk analysis and include periodic assessment of the integrity of the pipeline through various methods no less than every five years unless certain conditions are met. H.R. 144, H.R. 459 and S. 299 also include requirements for integrity management plans. The NTSB maintains it is essential for OPS to mandate and enforce a pipeline integrity inspection program for all operators.⁹ Both industry and OPS have been working for several years to improve federal regulations regarding integrity management. Congressional initiatives, if enacted, may add additional requirements in this area.

H.R. 3609 seeks to strengthen the authorities of the DOT to deal with security concerns associated with pipeline systems. The bill states that if DOT decides that a pipeline facility has a vulnerability to terrorist attacks, the Secretary may recommend that the operator of that facility take necessary actions to eliminate or reduce that vulnerability. That bill also specifies that the Secretary is to require the operator of a pipeline facility to develop and implement a terrorism security program, consisting of written procedures to follow and actions to take in the event of a terrorist attack on a pipeline facility or an attack on other U.S. infrastructure facilities. The operator is to establish and implement reasonable procedures to safeguard the pipeline facility and safely maintain its operations. Those procedures are to include procedures for communicating with military, law enforcement, emergency service, and other appropriate governmental and non-governmental entities. H.R. 3609 also requires the DOT Secretary to conduct a review of, and approve or disapprove, the security program of each pipeline operator. The bill also states that if the DOT Secretary determines that if particular information that DOT obtains may reveal a systemic vulnerability of a pipeline system, or a vulnerability of a pipeline facility to attack, the information shall be withheld from public disclosure. Information withheld from public disclosure may be disclosed only to specified parties. The bill also authorizes the Secretary to provide technical assistance to an operator of a pipeline facility, or to state, local, or tribal officials, to prevent or respond to acts of terrorism that may affect a pipeline facility.

Federal/State Pipeline Safety Roles. The appropriate role of DOT versus that of the states in the regulation of pipeline safety and the enforcement of operating standards is a topic of continuing debate. Historically, in order to maintain uniformity of safety regulations, the OPS has issued regulations for interstate pipeline operations, with the states exercising regulatory authority only over intrastate pipelines. S. 235, as amended, allows the Secretary of DOT to make an agreement with a state authorizing it to participate in the oversight of interstate pipeline transportation. Each such agreement

⁹ NTSB testimony. March 13, 2000.

is to include a plan for a state authority to participate in special investigations involving incidents or new construction. S. 299/H.R. 459 and H.R. 144 would allow similar authority.

Increased Community Involvement in Pipeline Safety. S. 235, as passed by the Senate, requires operators to maintain liaison with various state or local entities and provide information, upon their request, on the integrity management program implemented at a facility and other aspects of facility operations, including the location of pipelines. The bill also requires each owner or operator of a pipeline facility to carry out a continuing program to educate the public regarding pipeline safety, including providing information on the use of one-call notification systems prior to excavation. S. 299, H.R. 144, H.R. 459, and H.R. 3609 include numerous provisions that are intended to substantially increase the scope and nature of public information available about specific pipeline facilities. Many state and local officials seek substantially increased and improved information about pipeline operations in their jurisdictions. Some companies maintain that there is no need for additional federal requirements in this area because they have already established community awareness and education programs.

Funding. S. 235, as passed by the Senate, authorizes funding for the OPS program for FY2002 through FY2004 and includes specific amounts of funds to carry out the pipeline integrity program and research and development activities. In addition, the bill specifies that \$8 million that would be obtained annually from the OSLTF fund to pay for OPA activities, such as emergency response drills. Many state officials want increased funding to be provided by OPS under the inspection grant program. Operators have been willing to pay what they consider to be reasonable and appropriate fees for the federal pipeline program, but they have objected when substantial increases in fees have been proposed or levied. S. 299/H.R. 459 would authorize larger sums than those that would be authorized under S. 235, as amended. H.R. 144 specifies authorization levels for FY2001 through FY2003, and H.R. 3609 specifies levels for FY2002 through FY2005.

OPS Responses to NTSB Concerns. The National Transportation Safety Board (NTSB) maintains that OPS has not responded adequately to some of its recommendations.¹⁰ S. 235, as passed by the Senate, specifies that the DOT Secretary and the OPS Director should comply with section 1135 of Title 49 to ensure timely response to NTSB recommendations about pipeline safety. S. 299 and H.R. 459 include a similar provision. On the other hand, OPS maintains that it has substantially improved its response rate to NTSB in recent years.

¹⁰ NTSB testimony before the Senate Commerce Committee, March 13, 2000, [<http://www.senate.gov/~commerce/hearings/0313chi.pdf>].