Congressional Research Service

**MEMORANDUM** September 20, 2010

**To:** Hon. Terry Lee
Attention: James Wright

**From:** Paul Parfomak, Specialist in Energy and Infrastructure Policy, 7-0030
Adam Vann, Legislative Attorney, 7-6978

**Subject:** **Information on Federal Law Related to Siting and Safety of Oil Pipelines**

You have asked CRS to provide you with background information on the federal role in the development of pipelines for the transmission of oil in the United States. This memorandum will address (1) the federal government's role in overseeing pipeline safety and security; and (2) discuss the federal government's general deference to state law in matters related to pipeline permitting and granting of eminent domain authority, and briefly review Nebraska state law on these matters.

# Introduction

Roughly 170,000 miles of oil pipeline in the United States carry over 75% of the nation's crude oil and around 60% of its refined petroleum products.[1] These pipelines are integral to U.S. energy supply and have vital links to other critical infrastructure, such as power plants, airports, and military bases. There are nearly 200 *inter*state oil pipelines, which account for roughly 80% of total U.S. pipeline mileage and transported volume.[2] While an efficient and fundamentally safe means of transport, oil pipelines carry material with the potential to cause public injury and environmental damage. The nation's pipeline network is also widespread, running alternately through remote and densely populated regions; consequently, these systems are vulnerable to accidents and terrorist attack.

# Oil Pipeline Safety and the Federal Government

## Pipeline Safety Record

Taken as a whole, releases from pipelines (oil, natural gas and others) cause few annual fatalities compared to other product transportation modes. Oil pipelines reported an average of 2.6 deaths per year

[1] Pipeline and Hazardous Materials Safety Admin., "Natural Gas Transmission, Gas Distribution, and Hazardous Liquid Pipeline Annual Mileage," Web table, January 12, 2010, http://www.phmsa.dot.gov/pipeline/library/data-stats.

[2] Richard A. Rabinow, "The Liquid Pipeline Industry in the United States: Where It's Been, Where It's Going," Prepared for the Association of Oil Pipe Lines, April 2004, p. 4.

from 2004 through 2008; natural gas transmission pipelines reported an average of 1.0 death per year during the same period.[3] Accidental pipeline releases result from a variety of causes, including third-party excavation, corrosion, mechanical failure, control system failure, and operator error. Natural forces, such as floods and earthquakes, can also damage pipelines. According to the Department of Transportation (DOT), there were 103 oil pipeline accidents (and 63 natural gas transmission pipeline accidents) in 2008.[4] Although oil pipeline releases have caused relatively few fatalities in absolute numbers, a single pipeline accident can be catastrophic. Recent examples include the 2010 Enbridge Pipeline spill in Marshall, MI, which released 820,000 gallons of crude into a tributary of the Kalamazoo River, and the 2006 BP Alaska pipeline spill, which temporarily shut down oil production from the Prudhoe Bay—the nation's largest source of domestic oil supply.

## The Pipelines and Hazardous Materials Safety Administration

Under the Hazardous Liquid Pipeline Act of 1979 (P.L. 96-129) the Transportation Secretary is given primary authority to regulate key aspects of interstate pipeline safety: design, construction, operation and maintenance, and spill response planning. The Research and Special Improvement Act of 2004 created the Pipelines and Hazardous Materials Safety Administration (PHMSA), an agency within DOT focused solely on pipeline and hazardous material safety programs.[5] Pipeline regulations are administered through the Office of Pipeline Safety (OPS) within the PHMSA.

In addition to its own staff, PHMSA's enabling legislation allows the agency to delegate authority to *intra*state pipeline safety offices, and allows state offices to act as "agents" administering *inter*state pipeline safety programs (excluding enforcement) for those sections of *inter*state pipelines within their boundaries.[6] Over 400 state pipeline safety inspectors are available in 2010. PHMSA's pipeline safety program is funded primarily by user fees assessed on a per-mile basis on each regulated pipeline operator.[7]

PHMSA uses a variety of strategies to promote compliance with its safety standards. The agency conducts physical inspections of facilities and construction projects; conducts programmatic inspections of management systems, procedures, and processes; investigates safety incidents, and maintains a dialogue with pipeline operators. The agency clarifies its regulatory expectations through published protocols and regulatory orders, guidance manuals, and public meetings. PHMSA relies upon a range of enforcement actions, including administrative actions and civil penalties, to ensure that operators correct safety violations and take measures to preclude future safety problems. PHMSA also conducts accident investigations and systemwide reviews focusing on high-risk operational or procedural problems and areas of the pipeline near sensitive environmental areas, high-density populations, or navigable waters.

Since 1997, PHMSA has increasingly encouraged industry's implementation of "integrity management" programs on pipeline segments near "high consequence" areas. Integrity management provides for continual evaluation of pipeline condition; assessment of risks to the pipeline; inspection or testing; data analysis; and followup repair, as well as preventive or mitigative actions. High-consequence areas include

[3] Pipeline and Hazardous Materials Safety Administration, "Significant Pipeline Incidents," Web page, January 25, 2010. http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html

[4] Ibid.

[5] P.L. 108-426, at § 2.

[6] 49 U.S.C. 601. States may recover up to 50% of their costs for these programs from the federal government.

[7] 49 U.S.C. § 60107.

population centers, commercially navigable waters, and environmentally sensitive areas, such as drinking water supplies or ecological reserves. The integrity management approach directs priority resources to locations of highest consequence rather than applying uniform treatment to the entire pipeline network.[8] Under PHSMA regulations, integrity management programs are mandatory for most operators with 500 or more miles of regulated oil pipeline.[9]

### Pipeline Safety Improvement Act of 2002

On December 12, 2002, President Bush signed into law the Pipeline Safety Improvement Act of 2002.[10] The act strengthened federal pipeline safety programs, state oversight of pipeline operators, and public education regarding pipeline safety.[11] The act authorized the DOT to order safety actions for pipelines with potential safety problems (§ 7) and increased violation penalties (§ 8). The act streamlined the permitting process for emergency pipeline restoration by establishing an interagency committee, including the DOT, the Environmental Protection Agency, the Bureau of Land Management, the Federal Energy Regulatory Commission, and other agencies, to ensure coordinated review and permitting of pipeline repairs (§ 16). The act required DOT to study ways to limit pipeline safety risks from population encroachment and ways to preserve environmental resources in pipeline rights-of-way (§ 11). P.L. 107-355 also included provisions for public education, grants for community pipeline safety studies, "whistle blower" and other employee protection, employee qualification programs, and mapping data submission.

## Oil Pipeline Security and the Federal Government

### Transportation Security Administration

In November 2001, President Bush signed the Aviation and Transportation Security Act (P.L. 107-71) establishing the Transportation Security Administration (TSA) within the DOT. The act placed federal pipeline security authority (under PDD-63)[12] within TSA. The act specified for TSA a range of duties and powers related to general transportation security, such as intelligence management, threat assessment, mitigation, security measure oversight and enforcement, among others. On November 25, 2002, President Bush signed the Homeland Security Act of 2002 (P.L. 107-296) creating the Department of Homeland Security (DHS). Among other provisions, the act transferred to DHS the Transportation Security Administration from the DOT (§ 403). On December 17, 2003, President Bush issued Homeland Security Presidential Directive 7 (HSPD-7), clarifying executive agency responsibilities for identifying, prioritizing, and protecting critical infrastructure.[13] HSPD-7 maintains DHS as the lead agency for pipeline security (par. 15), and instructs the DOT to "collaborate in regulating the transportation of

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[8] Research and Special Programs Administration (RSPA), *Pipeline Safety. Pipeline Integrity Management in High Consequence Areas (Hazardous Liquid Operators with 500 or More Miles of Pipeline)*, *Federal Register*, December 1, 2000, p. 75378.

[9] 49 C.F.R. § 195.

[10] P.L. 107-355.

[11] P.L. 107-355 encourages the implementation of state "one-call" excavation notification programs (§ 2) and allows states to enforce "one-call" program requirements. The act expands criminal responsibility for pipeline damage to cases where damage was not caused "knowingly and willfully" (§ 3). The act adds provisions for ending federal-state pipeline oversight partnerships if states do not comply with federal requirements (§ 4).

[12] PDD-63, or Presidential Decision Directive /NSC-63, is a presidential directive concerning regulatory oversight over critical infrastructure. It is available at: http://www.fas.org/irp/offdocs/pdd/pdd-63.htm.

[13] HSPD-7 supersedes PDD-63 (par. 37).

hazardous materials by all modes (including pipelines)" (par. 22h). The order requires that DHS and other federal agencies collaborate with "appropriate private sector entities" in sharing information and protecting critical infrastructure (par. 25). TSA joined both the Energy Government Coordinating Council and the Transportation Government Coordinating Council under provisions in HSPD-7. The missions of the councils are to work with their industry counterparts to coordinate critical infrastructure protection programs in the energy and transportation sectors, respectively, and to facilitate the sharing of security information.

## TSA Pipeline Security Activities

Pipeline security activities at TSA are led by the Pipeline Security Division (PSD) within the agency's Office of Transportation Sector Network Management.[14] The mission of the PSD currently includes developing security standards; implementing measures to mitigate security risk; building and maintaining stakeholder relations; coordination, education and outreach; and monitoring compliance with security standards, requirements and regulations. According to the agency's *Transportation Systems Sector Specific Plan and Pipeline Modal Annex* (PMA) issued in May 2007, TSA has been engaged in a number of specific pipeline security initiatives in support of this mission.

In 2003, TSA initiated its Corporate Security Review (CSR) program, wherein the agency visits the largest pipeline and natural gas distribution operators to review their security plans and inspect their facilities. During the reviews, TSA evaluates whether each company is following the intent of federal pipeline security guidance—which is voluntary—and seeks to collect the list of assets each company has identified meeting the criteria established for critical facilities. As of February 2010, TSA had completed CSR's covering all of the largest 100 pipeline systems (84% of total U.S. energy pipeline throughput) and had completed revisits of 41 systems determined to be at highest risk. The agency plans to complete 12 additional CSRs by the end of 2010.[15] According to TSA, recent CSR results indicate that the majority of U.S. pipeline systems "continue to do a good job in regards to pipeline security" although there are areas in which pipeline security can be improved.[16] Past CSR reviews have identified inadequacies in some company security programs such as not updating security plans, lack of management support, poor employee involvement, inadequate threat intelligence, and employee apathy or error.[17]

TSA has worked to establish qualifications for personnel seeking unrestricted access to critical pipeline assets and has developed its own inventory of critical pipeline infrastructure.[18] The agency has also addressed legal issues regarding recovery from terrorist attacks, such as FBI control of crime scenes and eminent domain in pipeline restoration. In October 2005, TSA issued an overview of recommended security practices for pipeline operators "for informational purposes only ... not intended to replace security measures already implemented by individual companies."[19] The agency released revised guidance on security best practices at the end of 2006, and has been reviewing an updated version for

[14] These offices were formerly known as the Pipeline Security Program Office and the Intermodal Security Program Office, respectively.

[15] Transportation Security Administration, Personal communication, February 2, 2010.

[16] Ibid.

[17] Mike Gillenwater, TSA, "Pipeline Security Overview," Presented to the Alabama Public Service Commission Gas Pipeline Safety Seminar, Montgomery, AL, December 11, 2007.

[18] TSA, *TSA Multi-Modal Criticality Evaluation Tool*, TSA Threat Assessment and Risk Management Program, slide presentation, April 15, 2003.

[19] TSA, Intermodal Security Program Office, *Pipeline Security Best Practices*, October 19, 2005, p. 1.

possible release in 2010.[20] The guidelines include a section on cybersecurity developed with the assistance of the Applied Physics Laboratory of John Hopkins University as well as other government and industry stakeholders.[21]

# Oil Pipeline Siting Authority

The federal government does not have siting authority for oil pipelines, even interstate pipelines. This is in contrast to natural gas pipelines; under Section 7(c) of the Natural Gas Act,[22] parties seeking to construct, acquire or operate gas pipelines under the jurisdiction of the Federal Energy Regulatory Commission (FERC), i.e. interstate pipelines, must obtain a "certificate of public convenience and necessity" from FERC authorizing such acts and operations. No similar statutory language requires oil pipeline owners and operators to obtain certification from FERC or any other federal agency.

In the absence of federal government siting authority, state laws establish the primary siting authority for oil pipelines, including interstate oil pipelines. In Nebraska, there do not appear to be any permitting requirements that apply specifically to the construction and operation of oil pipelines.

The state statute does include an "eminent domain" provision which grants eminent domain authority to oil pipeline companies that are unable to obtain the necessary property rights from the relevant property owners. The statute provides:

> Any person engaged in, and any company, corporation, or association formed or created for the purpose of transporting or conveying crude oil, petroleum, gases, or other products thereof in interstate commerce through, or across the State of Nebraska, or intrastate within the State of Nebraska, and desiring or requiring a right-of-way or other interest in real estate, and being unable to agree with the owner or lessee of any land, lot, right-of-way or other property for the amount of compensation for the use and occupancy of so much of any lot, land, real estate, right-of-way or other property as may be reasonably necessary for the laying, relaying, operation and maintenance of any such pipeline or the location of any plant or equipment necessary to operate such pipeline, shall have the right to acquire the same for such purpose through the exercise of the power of eminent domain.[23]

The statute notes that such power of eminent domain should be acquired in accordance with the procedures for petitioning the state for eminent domain authority as set forth elsewhere in the Nebraska statutes.[24]

It should be noted that siting approval only represents a portion of the regulatory approvals one might need in order to construct a pipeline. For example, pipelines that will import oil from another country require the approval of the U.S. Department of State. A myriad of environmental statutes and regulations may also require a series of federal or state approvals and permits. Other statutory and regulatory obstacles may also arise depending on the nature of the project in question.

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[20] Transportation Security Administration, Personal communication, February 2, 2010.

[21] Ibid.

[22] 15 USC § 717f(c).

[23] Neb. Rev. Stat. § 57-1101.

[24] *Id.*

# Oil Pipeline Ratemaking Authority

Although neither FERC nor any other federal agency plays a role in permitting and siting oil pipelines, FERC does regulate the rates and practices of interstate oil pipelines. FERC's jurisdiction over oil pipelines is not apparent from existing federal statutes; rather, the jurisdiction is based in the Department of Energy Organization Act of 1977, which transferred to FERC "the duties and powers related to the establishment of a rate or charge for the transportation of oil by pipeline or the valuation of that pipeline that were vested on October 1, 1977 in the Interstate Commerce Commission or an officer or component of the Interstate Commerce Commission"[25] Those duties and powers were set forth in the Interstate Commerce Act as in effect at the time, and include the power to ensure that "each rate for any service rendered ... by a common carrier .. shall be just and reasonable."[26]

The Energy Policy Act of 1992 attempted to simplify and clarify FERC's oil pipeline ratemaking methodology after many years of confusion. This act required FERC to "issue a final rule which establishes a simplified and generally applicable ratemaking methodology for oil pipelines."[27] The act also grandfathered rates that had not been protested in the year prior to the enactment of the act, deeming them to be "just and reasonable."[28] FERC responded with a series of orders, starting with Order No. 561 and continuing with Order No. 571 and Order No. 572, that simplified the oil pipeline rate approval process. Order No. 561 essentially created a ratemaking formula based on an indexed methodology derived from the Produced Price Index for Finished Goods.[29] Order No. 571 authorized "cost-based rates," *i.e.* rates based on the cost of providing service plus a pre-approved rate of return for the pipeline company.[30] Order No. 572 authorized "market-based rates,"[31] *i.e.* rates established by market forces rather than cost of service, if the pipeline can show that it "lacks significant market power in the market in which it proposes to charge market-based rates."[32]

Oil pipelines have a number of rate options as a result of the Energy Policy Act of 1992 and subsequent FERC orders. In addition to potential eligibility for the static grandfathered rates or indexed pricing schemes set forth in Order No. 561, the oil pipeline may opt for "cost-based rates" or "market-based rates" upon a filing with FERC and the requisite demonstrations of suitability. Finally, oil pipelines are also free to negotiate "settlement" rates with customers that are not subject to these restrictions if the proposed rates have been agreed to in writing by each customer who will be using the service covered by the proposed rate.[33]

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[25] 49 U.S.C. § 60502.

[26] Interstate Commerce Act at § 1(5)(b). This Section was repealed in 1978 (P.L. 95-473, § 4(b)-(c)), but remains applicable to FERC's jurisdiction pursuant to the quoted language from 49 U.S.C. § 60502.

[27] P.L. 102-486 at § 1801(a).

[28] *Id.* at 1803(a).

[29] *Order No. 561*; *Revision to Oil Pipeline Regulations Pursuant to the Energy Policy Act of 1992*, FERC. Stat. and Regs. ¶ 30,985 (1993).

[30] *Order No. 571*; *Cost-of-Service Reporting and Filing Requirements for Oil* Pipelines, FERC Stat. and Regs. ¶ 31,00 (1994).

[31] Order No. 572; *Market-based Ratemaking for Oil Pipelines*, FERC Stat. and Regs. ¶ 31,007 (1994).

[32] 18 C.F.R. § 342.4(b).

[33] 18 C.F.R. § 342.4(c).