

ACTIONS NEEDED TO ENHANCE PIPELINE SECURITY

Pipeline and Hazardous Materials Safety Administration

Report Number: AV-2008-053

Date Issued: May 21, 2008



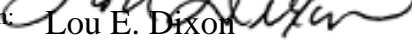
Memorandum

U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** Actions Needed To Enhance
Pipeline Security
Pipeline and Hazardous Materials
Safety Administration
Report Number AV-2008-053

Date: May 21, 2008

From: 
Lou E. Dixon
Assistant Inspector General
for Aviation and Special Program Audits

Reply to
Attn. of: JA-10

To: Pipeline and Hazardous Materials
Safety Administrator

This report presents the results of our review on multi-agency actions to implement the pipeline security annex to the Memorandum of Understanding (MOU) between the Department of Transportation (DOT) and Department of Homeland Security (DHS). The Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006¹ requires the Office of Inspector General to assess actions taken to implement the annex.

Consistent with the act, our audit objectives were to: (1) assess the adequacy and effectiveness of the process by which DOT communicates and coordinates with DHS on matters of pipeline security; (2) assess the agencies' status in implementing the program elements outlined in the annex; and (3) review the role, responsibility, and authority of DOT regarding pipeline security matters. We conducted this review between June and November of 2007 in accordance with generally accepted Government Auditing Standards as prescribed by the Comptroller General of the United States. Exhibit A details our objectives, scope and methodology, and related audits. Exhibit B outlines the program elements in the annex.

¹ Pub. L. No. 109-468 (2006).

SECURING THE NATION'S PIPELINE SYSTEMS IS A CONTINUING CHALLENGE

The Nation's pipeline infrastructure is a network of approximately 2 million miles of pipelines that move millions of gallons of hazardous liquids and billions of cubic feet of natural gas daily. Within the United States, there are about 2,200 natural gas pipeline operators and 300 hazardous liquids pipeline operators.

DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) is responsible for overseeing the safety of the Nation's pipeline system. The Transportation Security Administration (TSA) within DHS is responsible for securing the Nation's transportation infrastructure, including pipelines.

Safeguarding the Nation's massive pipeline infrastructure from catastrophic events (i.e., terrorism or natural disasters) is a continuing challenge for DOT and DHS. In 2005, Hurricane Katrina devastated the Gulf Coast region and demonstrated the vulnerabilities of the Nation's critical infrastructure. Loss of electrical power to pumping stations forced three major pipeline operators to shut down. This eliminated most fuel sources to the entire eastern seaboard and caused a vast array of economic disruptions, including hoarding and severe price spikes.

It should be noted that the most frequently targeted mode of transportation by terrorists worldwide is pipeline systems. In Colombia, for example, rebels have bombed the Caño Limón oil pipeline over 600 times since 1995. Terrorist plots against pipelines have also occurred within the United States.

- In December 1999, Federal agents arrested two anti-government militia members for plotting to detonate 24 million gallons of liquid propane at a storage facility in Elk Grove, California.
- In June 2007, the U.S. Department of Justice arrested members of a terrorist group planning to attack jet fuel pipelines and storage tanks at the John F. Kennedy (JFK) International Airport in New York.
- In November 2007, a U.S. citizen was sentenced to 30 years in Federal prison for plotting to help an alleged al-Qaeda operative blow up U.S. oil pipelines and refineries.

In addition, pipeline incidents can have deadly implications, such as the August 19, 2000, natural gas transmission pipeline (30-inch-diameter) that ruptured adjacent to the Pecos River near Carlsbad, New Mexico. The released gas ignited and burned for 55 minutes. Twelve people who were camping under a concrete-decked steel bridge that supported the pipeline across the river were killed, and their three vehicles were destroyed. Two nearby steel suspension bridges for gas pipelines crossing the river were also extensively damaged.

These events underscore the need for a well-defined, well-coordinated, interagency approach to prevent, detect, and respond to such events. As we have stated in our DOT Top Management Challenges reports,² there is growing interdependency between DOT and other Federal agencies to ensure safe, secure, and efficient transportation. This is most evident in the responsibility to protect the public from criminal and terrorist acts, particularly in DOT's working relationship with DHS.

In today's constrained fiscal environment, DOT and DHS must leverage their resources to secure the Nation's pipelines. TSA's pipeline security program—with just 11 personnel—has the biggest challenge to effectively oversee the vast network of natural gas and hazardous liquids pipeline operators. Although PHMSA has regional offices and about 80 inspectors nationwide, it partners with state agencies—which have over 400 inspectors—to oversee and enforce compliance with pipeline safety requirements, primarily operators of natural gas distribution pipeline systems. Thus, it is incumbent upon PHMSA, TSA, and their state partners to effectively work together to enhance the security of the Nation's pipeline infrastructure.

Congress continues to emphasize the importance of securing the Nation's pipelines and related infrastructure. On August 3, 2007, the President signed into law the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Commission Act).³ The law mandates, by 1 year after enactment, that the Secretary of Homeland Security and the Secretary of Transportation develop and implement a plan to review and inspect the 100 most critical pipeline operators' pipeline security plans and critical facilities.

RESULTS IN BRIEF

We found that PHMSA and TSA have taken initial steps toward formulating an action plan to implement the provisions of the pipeline security annex, which are important to enhance pipeline security, clearly define roles, maximize resources, and prevent duplication of effort. However, further actions need to be taken with a sense of urgency because the current situation is far from an “end state” for enhancing the security of the Nation's pipelines.

In September 2004, DOT and DHS entered into an MOU to facilitate the development and deployment of transportation security measures. In August 2006, PHMSA and TSA signed an annex to the MOU to establish clear lines of authority and responsibility over pipeline security matters. To accomplish this, the

² OIG Report Number PT-2006-007, “DOT's FY 2006 Top Management Challenges,” November 15, 2005, and OIG Report Number PT-2005-008, “DOT's FY 2005 Top Management Challenges,” November 15, 2004. OIG reports are available on our website: www.oig.dot.gov.

³ Pub. L. No. 110-53 (2007).

annex requires PHMSA and TSA to jointly develop an action plan by February 2007 to implement the annex provisions and program elements. Some program elements of the annex include identifying critical infrastructure and key resources; performing risk assessments; strategic planning; developing regulations, guidelines and directives; and conducting inspection and enforcement actions.

PHMSA and TSA established a joint working group tasked with developing a multi-year action plan to execute the annex provisions and program elements. However, PHMSA and TSA have neither finalized the action plan to implement the annex nor initiated key program elements due to a working relationship that was not always cooperative. Both PHMSA and TSA agreed that they did not always coordinate their efforts in a collegial manner.

Beginning in the second half of 2007, PHMSA and TSA began improving their coordination to address the annex provisions and program elements. For example, PHMSA created and staffed a new management position within the Office of the PHMSA Administrator. This manager is responsible for all aspects of PHMSA's emergency management and security policy activities and reports directly to the Chief Safety Officer. This individual will also liaison with other agencies, including TSA and other stakeholders, regarding emergency management and security policy issues.

To further enhance the security of the Nation's pipeline infrastructure, PHMSA and TSA need to complete the following actions:

Finalize and effectively execute the action plan to implement the security annex. PHMSA and TSA signed the annex 21 months ago, but the two agencies still have not finalized the action plan to fully implement the program elements of the annex—even though the deadline (February 2007) elapsed over a year ago. In December 2007, the agencies had not completed 9 of the 11 program elements, and the action plan did not contain several initiatives designed specifically to enhance coordination efforts. These include procedures to coordinate on observations or recommended measures from vulnerability assessments to determine if they conflict with current or planned safety requirements. Interagency coordination is essential to prevent the implementation of security recommendations that could inadvertently contradict safety regulations and put the safety of the Nation's pipelines at risk.

During the first 2 months of 2008, the two agencies began addressing outstanding annex program elements. PHMSA and TSA developed a new action plan, dated February 11, 2008, which estimates that most of the program element initiatives will be complete by the last quarter of 2009. While PHMSA and TSA have made progress toward finalizing the action plan, this progress began nearly a year after the completion deadline agreed to in the annex. Both agencies must sustain and

expedite these collaborative efforts to finalize and effectively execute the annex provisions and program elements.

Delineate roles and responsibilities in overseeing and enforcing security regulations for operators of liquid natural gas (LNG) facilities.⁴ By law, TSA holds the lead authority and primary responsibility for security activities in all modes of transportation, including pipelines. TSA currently conducts reviews of pipeline operators' compliance with TSA voluntary guidance⁵ but does not have regulations related to pipeline security and does not take enforcement actions against pipeline operators. PHMSA has—and enforces—its own security regulations that existed prior to the creation of TSA in 2001. As a result, both agencies conduct reviews of LNG operators' security procedures. PHMSA's regulations have specific security requirements⁶ for operators of LNG facilities, and PHMSA inspects LNG facilities to ensure that they meet those requirements. TSA has stated that it can issue security directives, but it has not done so. These directives would allow TSA to take enforcement actions against pipeline operators.

Because the annex does not explicitly state which agency has primary oversight and enforcement authority for LNG operators, there is a lack of clearly defined roles at the working level. This could cause pipeline operators to receive conflicting or duplicative guidance, which will ultimately impede security measures. To resolve this issue, the annex should be amended to clearly delineate the roles and responsibilities of PHMSA and TSA in overseeing and enforcing security regulations for LNG operators.

Maximize the strategy to assess pipeline operators' security plans and guidance. The 9/11 Commission Act requires DOT and DHS to develop a plan to review the 100 most critical operators' security plans and critical facilities by August 2008.⁷ The act also requires that DOT and DHS issue security recommendations by February 2009 to operators of natural gas and hazardous liquids pipelines and pipeline facilities. The act also stipulates that if DHS determines that regulations are appropriate, it is required to consult with DOT. One of the two agencies shall then promulgate the regulations and perform necessary inspection and enforcement functions. The need for new security regulations will be partly determined by the degree to which pipeline operators are following TSA's current security guidance.

⁴ LNG is natural gas cooled to an extremely low temperature, which causes it to liquefy. There are 113 LNG facilities in the United States.

⁵ Following the events of September 11, 2001, PHMSA (formerly the Research and Special Programs Administration) developed voluntary pipeline security guidance in 2002, which TSA has since formally adopted.

⁶ Liquefied Natural Gas Facilities: Federal Safety Standards, 49 C.F.R. § 193 (2007).

⁷ PHMSA security guidance defines a facility's critical categorization by three factors: (1) whether it is a viable terrorist target, (2) how important it is to the Nation's energy infrastructure, and (3) how likely it is to be used as a weapon to harm people.

However, TSA's current security guidance is not mandatory and remains unenforceable unless a regulation is issued to require industry compliance. To adequately determine if new security regulations are needed, PHMSA and TSA will need to conduct covert tests of pipeline systems' vulnerabilities to assess the current guidance as well as evaluate operators' compliance. Until this is done, there is no way to effectively assess the adequacy of the security guidance or to measure operator compliance with the guidance.

In our opinion, actions are needed from both PHMSA and TSA to maximize resources for assessing pipeline operators' security plans and guidance. These actions should include:

- Ensuring that PHMSA is actively involved in the inspections of the 100 most critical operators' security plans and critical facilities. To date, PHMSA's role has been limited to an "as needed" basis. According to PHMSA, it has not regularly attended past TSA security reviews of pipeline operators. To ensure effective and timely execution of this congressional mandate, PHMSA should participate in these inspections on a regular basis, especially given its level of expertise in security-related matters.
- Developing testing protocols and performing vulnerability tests to ascertain, among other things, if unauthorized individuals can penetrate operators' critical infrastructure (including cyber attacks). Currently, there are no plans to develop protocols and conduct vulnerability tests. Without testing, there is no way to effectively measure operators' compliance with existing guidance or assess the adequacy of the guidance.

PHMSA and TSA must work together to develop a pipeline security strategy that maximizes the value and efficiency of both agencies' efforts. This is a fundamental factor in enhancing pipeline security. PHMSA must make every effort possible to communicate and coordinate with TSA to resolve the issues identified in this report. If PHMSA and TSA are unable to expedite the actions needed and improve coordination, it may be necessary for Congress to take action.

Our complete recommendations are listed on page 12. PHMSA's comments and our response are discussed on pages 13 and 14.

FINDINGS

PHMSA and TSA have taken initial steps toward formulating an action plan to implement the provisions of the annex; however, further actions are needed as the current situation is far from an “end state” for enhancing the security of the Nation’s pipeline system. After PHMSA and TSA signed the annex, they designated a joint working group to develop a multi-year action plan for implementing the provisions and program elements of the annex. The working group was to complete its efforts on developing the action plan by February 2007. Almost a year later, the working group developed a multi-year action plan, which identified many, but not all, of the initiatives and milestones to execute each program element.

Based on our review, PHMSA and TSA need to complete the following actions to further enhance the security of the Nation’s pipeline infrastructure: (1) finalize and effectively execute the action plan for implementing the security annex, (2) amend the annex to delineate the roles and responsibilities of PHMSA and TSA in overseeing and enforcing security regulations for LNG operators, and (3) maximize the strategy used to assess pipeline operators’ security plans and guidance to ensure effective and timely execution of congressional mandates in the 9/11 Commission Act.

PHMSA and TSA Need To Finalize and Effectively Execute the Action Plan for Implementing the Security Annex

PHMSA and TSA signed the annex 21 months ago; yet, the two agencies have neither finalized the action plan to implement the annex program elements nor developed several initiatives. This has delayed key elements of the annex that were designed specifically to enhance communication and coordination efforts between the two agencies. For example, PHMSA and TSA have not developed an initiative to coordinate on observations or recommended measures from vulnerability assessments to determine if they conflict with current or planned safety requirements. This coordination is essential to prevent security recommendations that could unintentionally contradict safety regulations and put the safety of the Nation’s pipelines at risk.

Towards the end of 2007, we found that the agencies had not completed 9 of the 11 annex program elements because there are no deadlines to foster timely reviews and decision processes; further, the agencies are not held accountable for failure to abide by the annex provisions. Without interim deadlines and accountability, there is no guarantee the action plan will be finalized and properly executed.

For example:

- The December 2007 action plan to implement the annex did not contain some of the initiatives for program elements. For instance, the plan did not include certain items that the agencies agreed to in the annex, such as (1) an initiative for PHMSA to provide TSA with data and information collected during PHMSA's security inspections or reviews of security plans, (2) protocols for ongoing information sharing and participation in their respective research and development planning, and (3) an initiative for TSA to coordinate with PHMSA on observations or recommended measures—derived from the results of criticality and vulnerability assessments—to evaluate whether they conflict with or adversely affect current or planned safety requirements.
- PHMSA and TSA had not established target dates to complete some of the elements and element initiatives. Under the annex, PHMSA and TSA agreed to develop a plan with specific timeframes for implementing the program elements. For example, the December 2007 plan did not contain timeframes to: (1) develop a procedure for requesting special permits to install pipeline facilities in the event of a security incident, (2) provide training to TSA staff on technical issues related to PHMSA's mission, or (3) perform a study on the petroleum pipeline network supply.
- Some elements have future target dates that extend out to 2009 (we are concerned that PHMSA and TSA will not meet these deadlines, since they have been unable to finalize the action plan to execute the annex).

During the first 2 months of 2008, the two agencies began addressing outstanding annex program elements. PHMSA and TSA developed a new action plan, dated February 11, 2008, which estimates that most of the program element initiatives will be complete by the last quarter of 2009. Also, the plan now contains initiatives for PHMSA to invite TSA to its security reviews of LNG facilities and for PHMSA and TSA to share security-related enforcement actions. However, the current action plan still does not contain initiatives (1) to develop protocols for ongoing information sharing and participation in the agencies' respective research and development planning and (2) for TSA to coordinate with PHMSA on observations or recommended measures—derived from the results of criticality and vulnerability assessments—to evaluate whether they conflict with or adversely affect current or planned safety requirements.

While PHMSA and TSA have made progress toward finalizing the action plan, this progress began nearly a year after the completion deadline agreed to in the annex. Both agencies must sustain and expedite these collaborative efforts to finalize and effectively execute the annex provisions and program elements.

PHMSA and TSA Need To Delineate Their Roles and Responsibilities for Overseeing and Enforcing Security Regulations for Operators of LNG Facilities

A central goal of the annex was to delineate clear lines of authority and prevent duplication of effort. Yet, the annex does not contain language that explicitly states which agency will be responsible overseeing and enforcing security regulations for operators of LNG facilities. Since both PHMSA and TSA can conduct reviews of LNG facilities, a clear line of authority does not exist. This creates the potential for duplicative efforts and confusion among LNG operators regarding which agency they should look to for guidance as the lead Federal security regulator.

By law, TSA holds the lead authority and primary responsibility for security activities in pipelines. In practice, PHMSA's role, responsibility, and authority in pipeline security include enforcing its LNG safety regulations (which include specific security requirements) that existed prior to the creation of TSA. Under PHMSA regulations, LNG facilities must have, among other things, a (1) security manual, (2) security training program for employees, (3) security communications system, and (4) security lighting and monitoring system. PHMSA inspects LNG facilities to ensure they are meeting these requirements. The LNG facilities regulations are the only PHMSA pipeline regulations that specifically delineate operators' security responsibilities in detail. For hazardous liquid and gas pipelines, PHMSA has other pipeline safety regulations that require pipeline operators to prevent vandalism and unauthorized use of equipment.

While PHMSA continues to oversee the security of LNG facilities, TSA has stated that it can issue security directives, but it has not done so. These directives would allow TSA to take enforcement actions against pipeline operators. TSA currently conducts reviews of pipeline operators' compliance with voluntary guidance but does not have regulations related to pipeline security and does not take enforcement actions against pipeline operators.

To further complicate the matter, the United States Coast Guard—a DHS agency responsible for marine and port security—also has authority to oversee and enforce its security regulations for operators of LNG facilities.⁸ Several of the operators' LNG facilities are located in the Nation's ports or along its eastern seaboard.

PHMSA, the U.S. Coast Guard, and the Federal Energy Regulatory Commission⁹ executed an interagency agreement in 2004 for safety and security reviews of

⁸ Maritime Security: Facilities, 33 C.F.R. § 105 (2007).

⁹ The Federal Energy Regulatory Commission is responsible for authorizing the site and construction of onshore LNG facilities and also conducts environmental, safety, and security reviews of LNG plants and related pipeline facilities.

LNG facilities. The purpose of the agreement was, among other things, “to avoid duplication of effort and to maximize the exchange of relevant information related to the safety and security aspects of LNG facilities and the related marine concerns.”

In our view, a similar approach should be taken with the pipeline security annex to resolve the issue of overlapping authority between PHMSA and TSA. The annex should be amended to specifically delineate the agencies’ roles and responsibilities in overseeing and enforcing security regulations for LNG operators.

PHMSA and TSA Need To Maximize the Strategy Used To Assess Pipeline Operators’ Security Plans and Guidance

Congress continues to emphasize the importance of securing the Nation’s pipelines and related infrastructure. In August 2007, Congress passed the Implementing Recommendations of the 9/11 Commission Act. The act mandates, among other things, the following actions related to pipeline security for the Secretary of Homeland Security and the Secretary of Transportation:

- DHS, in consultation with DOT, is required to establish a program for reviewing pipeline operators’ adoption of recommendations in a 2002 PHMSA security guidance document. The PHMSA guidance recommended that, among other things, pipeline operators: (1) identify critical facilities, (2) develop and implement a corporate security plan, and (3) review the corporate security plan on an annual basis and revise as necessary to reflect changing conditions. The program must also include a plan to review pipeline security plans and critical facility inspections by May 2008.
- DHS and DOT are required to develop and implement a plan for reviewing and inspecting the 100 most critical pipeline operators’ pipeline security plans and critical facilities.¹⁰ The agencies are required to develop and implement a plan by August 3, 2008.
- DHS and DOT shall develop and transmit to pipeline operators security recommendations for natural gas and hazardous liquid pipelines and pipeline facilities by February 2009.
- If DHS determines that regulations are appropriate, it is required to consult with DOT. One of the two agencies shall then promulgate the regulations and perform necessary inspection and enforcement functions.

¹⁰ PHMSA security guidance defines a facility’s critical categorization by three factors: (1) whether it is a viable terrorist target, (2) how important it is to the Nation’s energy infrastructure, and (3) how likely it is to be used as a weapon to harm people.

To determine whether additional security regulations are needed, PHMSA and TSA will need to evaluate and test the adequacy of existing security standards as agreed to under the annex. The need for new security regulations will be partly determined by the degree to which pipeline operators are following existing guidance.

However, the current security guidance created by PHMSA, TSA, and pipeline industry associations is not mandatory and remains unenforceable unless a regulation is issued to require industry compliance. Further, the guidance is general in nature and only provides a broad overview of security issues in industry and effective policies and practices. To determine if new security regulations are needed, PHMSA and TSA will need to conduct covert tests of pipeline systems' vulnerabilities to assess the current guidance as well as evaluate operators' compliance.

Although the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006 also requests an assessment of TSA security guidance, we did not perform those activities for several reasons. To truly assess whether existing security guidance is adequate, we would have needed to: (1) evaluate operators' compliance with the guidance; (2) develop testing protocols; and (3) perform vulnerability tests to ascertain, among other things, if unauthorized individuals can penetrate operators' critical infrastructure. It is not within the DOT Office of Inspector General's jurisdiction to perform such activities. We discussed these matters with the congressional committees of jurisdiction.

Because PHMSA and TSA have reviewed pipeline operators' compliance with security guidance in the past, these agencies would be best suited to evaluate this area. Therefore, it would be appropriate for PHMSA and TSA to collaborate in assessing whether existing security guidance is adequate.

In our opinion, however, actions are needed from both PHMSA and TSA to maximize the strategy for assessing pipeline operators' security plans and guidance. These actions should include the following:

- Ensuring that PHMSA is actively involved in the inspections of the 100 most critical operators' security plans and critical facilities. To date, PHMSA's role has been limited to an "as needed" basis. According to PHMSA, it has not regularly attended past TSA security reviews of pipeline operators. To ensure effective and timely execution of this congressional mandate, PHMSA should participate in these inspections on a regular basis, especially given its level of expertise in security-related matters.

- Developing testing protocols and performing vulnerability tests to ascertain, among other things, if unauthorized individuals can penetrate operators' critical infrastructure (including cyber attacks). Currently, there are no plans to develop protocols and conduct vulnerability tests. Without testing, there is no way to effectively measure operators' compliance with existing guidance or assess the adequacy of the guidance.

PHMSA and TSA must work together to develop a pipeline security strategy that maximizes the value and efficiency of both agencies' efforts. This is a fundamental factor in enhancing pipeline security. PHMSA must make every effort possible to communicate and coordinate with TSA to move forward in completing the actions identified in this report. If PHMSA and TSA are unable to expedite the actions needed and improve coordination, it may be necessary for Congress to take action.

RECOMMENDATIONS

PHMSA should make it a top management priority to finalize and execute the action plan for implementing the security annex and meet the deadlines mandated in the 9/11 Commission Act. Therefore, we recommend that the PHMSA Administrator collaborate with the TSA Administrator to complete the following actions:

1. Finalize the action plan for implementing the annex provisions and program elements and effectively execute the action plan.
2. Amend the annex to clearly delineate the roles and responsibilities of PHMSA and TSA in overseeing and enforcing security regulations for LNG operators.
3. Maximize the strategy used to assess pipeline operators' security plans and guidance to ensure effective and timely execution of congressional mandates in the 9/11 Commission Act. At a minimum, enhancements to the strategy need to include (a) actively engaging PHMSA assistance in inspecting the 100 most critical pipeline operators' pipeline security plans and critical facilities and (b) developing protocols and conducting vulnerability tests to effectively measure operators' compliance with existing guidance or assess the adequacy of the guidance.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

On January 31, 2008, we provided PHMSA Headquarters officials with a preliminary draft and discussed our results with them. On February 1, 2008, we submitted our draft report to PHMSA and requested its formal comments. We subsequently met with PHMSA's Chief Safety Officer to discuss her views on the issues presented in this report. We agreed to revise the draft as appropriate to include the Agency's recent progress toward finalizing the action plan to fully implement the annex program elements. We provided PHMSA with our revisions on February 15, 2008.

We received PHMSA's formal response on March 7, 2008, which concurred with our recommendations and provided appropriate planned actions and target dates.

- **Recommendation 1:** PHMSA stated it will continue to work with its TSA partners to regularly update and prioritize items on the action plan and then execute those items. Also, to improve accountability and management visibility, the action plan will be updated monthly and forwarded to PHMSA's Chief Safety Officer for review. PHMSA's actions taken to resolve this recommendation were effective as of March 7, 2008.
- **Recommendation 2:** PHMSA stated it will work with TSA and the other agencies with which it has Memoranda of Understanding concerning LNG facilities to determine if further clarification of roles and responsibilities in oversight and enforcement of security regulations for affected LNG operators is warranted. PHMSA will also assist TSA in its communication and work with appropriate state agencies that have regulatory oversight of peak-shaving¹¹ LNG facilities. PHMSA will notify our office of this determination by June 30, 2008.
- **Recommendation 3:** PHMSA stated that it will work closely with TSA to execute the pipeline mandates in the 9/11 Commission Act. Because PHMSA's pipeline safety inspection resources are already committed for FY 2008, it is unlikely to actively participate with TSA in the remaining inspections of the top 100 pipeline operators. However, PHMSA will work with TSA as it compiles and analyzes the results of the inspections to determine the extent to which operators voluntarily complied with 2002 security standards.

¹¹ LNG peak-shaving facilities store surplus natural gas that is to be used to meet the requirements of peak consumption later during winter or summer.

PHMSA also stated that it has little experience in covertly assessing the effectiveness of security plans and must defer to TSA for this expertise. Nonetheless, based on TSA's inspections and vulnerability assessments, PHMSA will work with TSA to determine if the security standards and guidance adequately ensure the safety of the Nation's pipeline facilities and whether security-focused regulations are needed. PHMSA's actions taken to resolve this recommendation were effective as of March 7, 2008.

PHMSA also provided several general comments, such as emphasizing that, as a matter of policy, it recognizes that TSA has primary responsibility for pipeline security and it is committed to support TSA's leadership in these matters. PHMSA further emphasized recent actions taken to enhance communication and coordination between PHMSA and DHS, including the DOT Secretary and Deputy Secretary quarterly meetings with the DHS Secretary and Deputy Secretary to discuss interdepartmental issues and initiatives. PHMSA's full response is included in the appendix to this report.

We also provided TSA Headquarters officials with a copy of the draft report on February 8, 2008, and have incorporated their comments as appropriate.

ACTIONS REQUIRED

PHMSA's response and planned actions address the intent of our recommendations. In accordance with the provisions of DOT Order 8000.1C, we will follow up with PHMSA to ensure its corrective actions are consistent with our recommendations.

We appreciate the courtesies and cooperation of PHMSA and TSA representatives during this audit. If you have any questions concerning this report, please contact me at (202) 366-0500 or Scott Macey, Program Director, at (415) 744-0434.

#

EXHIBIT A. OBJECTIVES, SCOPE AND METHODOLOGY, AND RELATED AUDITS

Objectives

The Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006 (Pub. L. No. 109-468 [2006]) directed the Office of Inspector General to review DOT's actions to implement the pipeline security annex to the memorandum of understanding between DOT and DHS. Consistent with the act, our audit objectives were to: (1) assess the adequacy and effectiveness of the process by which DOT communicates and coordinates with DHS on matters of pipeline security; (2) provide the agencies' status in implementing the program elements outlined in the annex; and (3) review the role, responsibility, and authority of DOT regarding pipeline security matters.

Scope and Methodology

We conducted the audit between June 2007 and November 2007 in accordance with generally accepted Government Auditing Standards prescribed by the Comptroller General of the United States. We included necessary tests to provide reasonable assurance of detecting abuse or illegal acts.

To assess DOT's process for communicating and coordinating with DHS on matters of pipeline security, we interviewed agency officials at PHMSA's Office of Pipeline Safety and TSA's Pipeline Security Division. We reviewed correspondence on pipeline security matters between the two agencies and various associated documents.

To provide the agencies' status in implementing the annex program elements, we interviewed officials at PHMSA's Office of Pipeline Safety and TSA's Pipeline Security Division to discuss actions taken and needed by the two agencies to implement the annex. We examined (1) the security annex between PHMSA and TSA to identify the roles and responsibilities between the two agencies, (2) provisions and program elements of the annex, and (3) the PHMSA/TSA action plan initiatives and target dates to implement the annex.

To determine the role, responsibility, and authority of PHMSA regarding pipeline security matters, we examined the following:

- The Aviation Transportation and Security Act of 2001 (Pub. L. No. 107-71 [2001]).
- The Homeland Security Act of 2002 (Pub. L. No. 107-296 [2002]).
- The Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006.
- The Implementing Recommendations of the 9/11 Commission Act of 2007 (Pub. L. No. 110-53 [2007]).
- Title 49 Code of Federal Regulations Parts 192, 193, and 195 pertaining to pipeline security operations.
- Homeland Security Presidential Directives (HSPD) 5, “Management of Domestic Incidents,” HSPD 7, “Critical Infrastructure Identification, Prioritization, and Protection,” and HSPD 8, “National Preparedness.”

We also interviewed agency officials at PHMSA’s Office of Pipeline Safety and TSA’s Pipeline Security division to obtain each agency’s perspective on the division of pipeline security roles, responsibilities, and authority.

Although the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006 also requests an assessment of TSA security guidance, we did not perform those activities for several reasons. To truly assess whether existing security guidance is adequate, we would have needed to: (1) evaluate operators’ compliance with the guidance; (2) develop testing protocols; and (3) perform vulnerability tests to ascertain, among other things, if unauthorized individuals can penetrate operators’ critical infrastructure. It is not within DOT’s Office of Inspector General’s jurisdiction to perform such activities. We discussed these issues with the congressional committees of jurisdiction.

However, we did examine the 2002 Pipeline Security Information Circular, which PHMSA developed and TSA later adopted. We also examined the following:

- “Security Guidelines - Natural Gas Industry - Transmission and Distribution,” developed by the Intrastate Natural Gas Association of America, the American Gas Association, and the American Public Gas Association
- “Security Guidelines for the Petroleum Industry,” developed by the American Petroleum Institute.
- TSA’s “Pipeline Security Smart Practices.”
- Applicable laws and regulations.

We also interviewed representatives of the Interstate Natural Gas Association of America, the American Petroleum Institute, and the Association of Oil Pipeline to obtain their perspectives on the adequacy of Federal and industry pipeline security guidance.

During the audit, we visited or spoke with (via telephone) representatives from PHMSA's Eastern and Southwest regional offices to obtain their perspectives on field operations relating to pipeline security matters. We also visited five pipeline operators in Texas (Centerpoint Energy, ConocoPhillips, El Paso, Kinder Morgan, and Panhandle Energy); one pipeline operator in Virginia (Dominion); and one pipeline operator in California (Pacific Gas and Electric). At each location, we interviewed key program officials to obtain their perspectives on pipeline security matters and, where possible, toured their facilities.

Related Audit and Testimony Coverage

Report SC-2004-064, "Actions Taken and Needed for Improving Pipeline Safety," June 15, 2004. We reported that, among other things, it was unclear which agency or agencies would be responsible for pipeline security rulemaking, oversight, and enforcement and recommended that the delineation of roles and responsibilities between DOT and DHS be defined by executing a Memorandum of Understanding or Memorandum of Agreement.

Testimony CC-2004-055, "Actions Taken and Needed for Improving Pipeline Safety," June 15, 2004. The OIG presented testimony before the Senate Committee on Commerce, Science, and Transportation regarding actions taken and needed for improving pipeline safety. We reported that, among other things, DOT's Office of Pipeline Safety and TSA need to establish their respective pipeline security roles and responsibilities and then define them at the operational level.

Testimony CC-2004-061, "Actions Taken and Actions Needed To Improve Pipeline Safety," June 16, 2004. The OIG presented testimony to the House Committee on Transportation and Infrastructure, Subcommittee on Highways, Transit, and Pipelines regarding actions taken and needed for improving pipeline safety. We provided the same recommendation to the Senate Committee that we presented to the House Committee the previous day.

Testimony CC-2004-071, "Progress and Challenges in Improving Pipeline Safety," July 20, 2004. The OIG presented testimony before the House Energy and Commerce Committee, Subcommittee on Energy and Air Quality regarding progress and challenges in improving pipeline safety. We provided the same recommendation to the House Committee that we presented to the House

Subcommittee on Highways, Transit, and Pipelines and the Senate Committee on Commerce, Science, and Transportation the previous month.

Testimony CC-2006-023, “Pipeline Safety: Progress and Remaining Challenges,” March 16, 2006. The OIG presented testimony before the House Transportation and Infrastructure Committee, Subcommittee on Highways, Transit, and Pipelines regarding progress and remaining challenges in improving pipeline safety. We reported that the DOT’s Office of Pipeline Safety and TSA still need to define their roles and responsibilities at the operational level in an annex to the MOU. A lack of clearly defined roles among the Office of Pipeline Safety and TSA at the working level could lead to duplicative or conflicting efforts, less than effective intergovernmental relationship, and—most importantly—the potential for an uncoordinated response to a terrorist attack.

Testimony CC-2006-039, “Pipeline Safety: Progress and Remaining Challenges,” April 27, 2006. The OIG presented testimony before the House Committee on Energy and Commerce Subcommittee on Energy and Air Quality regarding progress and remaining challenges in improving pipeline safety. We provided the same recommendation to the House Committee that we presented to the House Subcommittee on Highways, Transit, and Pipelines the previous month.

EXHIBIT B. PROGRAM ELEMENTS IN THE PIPELINE SECURITY ANNEX

Program Element	Description
1. Identification of Critical Infrastructure/Key Resources and Risk Assessments	<p>The agencies agreed to review existing definitions of criticality and consider the need to refine definitions. To support TSA efforts in this area, PHMSA agreed to provide compliance data, other information collected in the course of security inspections or reviews of security plans (including those required under 49 CFR 172.800), and activities of transportation carriers and shippers.</p> <p>Also, TSA will coordinate with PHMSA on observations or recommended measures derived from the results of criticality and vulnerability assessments, including on pipelines, to evaluate whether they conflict with or adversely affect current or planned safety requirements.</p>
2. Strategic Planning	<p>The agencies will seek consensus concerning measures to reduce risk and minimize consequences of emergencies involving pipeline infrastructure. Also, the agencies will identify initiatives and activities for achieving performance goals and will develop a program framework and timetable for their completion.</p>
3. Standards, Regulations, Guidelines, and Directives	<p>The agencies will seek early and frequent coordination in the development standards, regulations, guidelines, or directives affecting transportation security; identify best practices; and explore opportunities to build on existing standards-setting activities. In the course of discharging their safety and security missions, the agencies will review the adequacy of existing standards in the private and public sector, identifying any gaps that should be addressed through rulemaking, guidelines, or directives.</p>
4. Inspections and Enforcement	<p>The agencies will explore opportunities for collaboration in inspection and enforcement activities, with the objective of maximizing the use of available resources and targeting enforcement resources on the basis of system risks. The agencies will immediately develop procedures for referral of safety and security issues to PHMSA and TSA, respectively; inventory existing inspection and enforcement resources; and develop specific plans for closer coordination in the deployment and use of inspectors, including any necessary additional training.</p>
5. PHMSA Technical Support	<p>TSA can ask for PHMSA's support to develop, staff, implement, or enforce regulations, orders, directives, plans, programs, or other measures. TSA can also ask for PHMSA support to conduct security reviews during an elevated security threat.</p>
6. Sharing Information During Emergency Response	<p>The agencies agreed to promptly share information about emergency situations that implicate the missions and interests of each other.</p>

7. Public Communication, Education, and Outreach	The agencies will review existing protocols for public communication concerning security-related matters, specifically including review of existing protocols for publication of information contained in the national pipeline mapping system (a map of the Nation's pipelines developed by PHMSA).
8. Communicating Protective Measures to Affected Organizations	The agencies agreed to consult with one another before disseminating security requirements, voluntary standards, and guidelines that impact security to the public.
9. Research and Development	The agencies will review their safety- and security-related projects and identify opportunities to collaborate and support their strategic plan through identification, development, and testing of new or modified technologies or processes. Also, the agencies will establish protocols for ongoing information sharing and participation in their respective research and development planning processes.
10. Legislative Matters	The agencies are to consult with each other as soon as possible on the development of proposed legislation, comments on legislative proposals, draft testimony or briefings to be given before congressional bodies or staff, and answers to questions for the record.
11. Budget	The agencies agreed to communicate throughout the budget development, justification, and execution process in order to develop and present a coordinated position on transportation security funding matters and to avoid duplicative requests for funding in connection with pipeline and hazardous material transportation security.

APPENDIX. AGENCY COMMENTS



U.S. Department
of Transportation

1200 New Jersey, S.E.
Washington, D.C. 20590

Pipeline and Hazardous Materials Safety Administration

March 07, 2008

Mr. David A. Dobbs
Principal Assistant Inspector General for Auditing and Evaluation
Office of the Inspector General
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

RE: OIG Project 07A3018A000

Dear Mr. Dobbs:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) thanks the Department's Office of Inspector General (OIG) for its efforts, reported in Project 07A3018A000, to examine the complex issues of pipeline security; to interview a wide range of government and private sector stakeholders; and to render its opinions on areas of pipeline security that need improvement. This letter responds to the recommendations contained in that report.

PHMSA, as a matter of policy, recognizes that the Transportation Security Administration (TSA) has primary responsibility for pipeline security. PHMSA is committed to support TSA's leadership in these matters. The TSA/PHMSA Annex to the Department of Homeland Security (DHS), DHS/DOT Memorandum of Understanding identifies eleven Program Elements for TSA and PHMSA cooperation and collaboration to promote pipeline security.

PHMSA has acknowledged TSA's role in leading security inspections of pipeline operators and their facilities. PHMSA has, in large part, discontinued performing inspections of pipeline operators' compliance with security protocols that would duplicate TSA's inspections. We have no reports of overlapping or duplicative security inspections from pipeline operators.

BACKGROUND

PHMSA's Pipeline Safety Program has always addressed the risks that security issues posed to safe operation of pipeline systems. Before 9/11, PHMSA addressed such risks by requiring operators to have plans and capabilities to protect pipeline facilities from vandalism and to facilitate response to foreseeable emergencies at their facilities.

Early in 2002, PHMSA's predecessor, the Research and Special Programs Administration (RSPA), worked with industry and State agencies, through the consensus standards process, to formulate consistent guidance for protecting Liquefied Natural Gas facilities, natural gas and hazardous liquid pipelines and their associated facilities. These guidelines identified protective actions that were scaled to the National Threat Advisory System levels.

In Section 1557 of the 9/11 Commission Act (Pub. L. 110-53), the Congress directed TSA and PHMSA to collaboratively develop and implement security standards, assess their effectiveness, then evaluate if regulations are needed to ensure pipeline security. The MOU Annex and the Pipeline Security Action Plan uniformly shows TSA as the leader in each provision, with support, collaboration, and consultation from PHMSA.

RECENT PHMSA ACTIONS

The following examples illustrate the enhanced communications and coordination between PHMSA and DHS that have been implemented in the past year. At the Departmental level, the Secretary and Deputy Secretary of Transportation meet quarterly with the Secretary and Deputy Secretary of Homeland Security to discuss cross-cutting and cross-Department issues and initiatives. PHMSA's Administrator also meets regularly with the Assistant Secretary of Homeland Security – Transportation Security Administration. Assisting TSA achieve its goals has been and remains a matter of the highest agency priority .

PHMSA representatives have met with TSA Pipeline Security Division staff at least quarterly to discuss accomplishments and milestones. In September, 2007, 9/11 Act items were placed on the Action Plan. At their meeting in December, 2007, both organizations identified primary points of contact to pass incident notification and follow-on with more detailed, operational information as events unfold. At a follow-up meeting in January 2008, changes to the Action Plan were made to reflect the agencies placing a priority on items in the 9/11 Commission Act. We plan routine coordination meetings between executives of each agency.

PHMSA recently established the new position of Planning and Preparedness Manager in the Office of the Administrator, reporting directly to the Chief Safety Officer. The manager is responsible for all aspects of PHMSA's emergency management and security policy activities and to provide liaison with other agencies, including TSA and stakeholders. Operationally, the manager is the designated Point of Contact for incident notification to TSA's Pipeline Security Division's Policy Director.

In December, 2007, a senior PHMSA headquarters staff member accompanied TSA as it conducted a Corporate Security Review (CSR) of a pipeline operator that had experienced a leak of product caused by vandalism. The official also attended a meeting hosted by the Commander, United States Coast Guard (USCG), DHS, Sector St. Petersburg, of the Sector's Maritime Security Council, concerning the vandalism event.

Appendix. Agency Comments

In another example, PHMSA worked with its TSA counterparts to address how the potentially sensitive information on PHMSA's National Pipeline Mapping System (NPMS), originally withdrawn from the public website after the 9/11 attacks, could be made available as an information tool for the public and community planners. As a result of this cooperation, the NPMS Public Viewer was restored on the web in April, 2007.

PHMSA participates in the DHS-sponsored Oil and Natural Gas, and Energy Government Coordinating Councils and associated Pipeline Sector Specific Council for coordination of a wide range of pipeline security issues with other Federal agency and private-sector officials. PHMSA participated in the February, 2008, DHS-sponsored Energy Critical Infrastructure Partnership Advisory Committee meeting. In December, 2007, TSA and DOT collaborated on a Transportation Security Information Sharing Plan that addresses several domains of security information, not otherwise addressed in the Annex.

Since November, 2007, PHMSA, the Federal Energy Regulatory Commission (FERC), the Department of Energy (DOE), and the Protective Security Coordination Division of the Office of Infrastructure Protection, TSA, and USCG, of DHS, have been collaboratively developing procedures to perform Comprehensive Reviews (CRs) for security of Maritime Liquefied Natural Gas (LNG) Facilities. PHMSA has existing MOUs with FERC and USCG concerning security review responsibilities at Waterfront Import / Export LNG facilities. We have discussed plans to harmonize management of inspection for these facilities. We believe that CR practices developed by this workgroup may be applied by TSA in CRs for inland, Peak-Shaving LNG facilities.

In total, PHMSA continues to communicate about pipeline incidents and facility safety information, coordinate pipeline security inspection activities, and work with TSA's Pipeline Security Division to accomplish the activities listed in the Pipeline Security Action Plan. PHMSA will improve its documentation of plans, activities and milestones and initiate regular reporting on the Action Plan to PHMSA's senior leadership. Additionally, PHMSA will continue to participate in several Government Coordinating Councils and Sector Coordinating Councils, hosted by the Department of Homeland Security's National Protection and Programs Directorate to bring its experience in pipeline safety and security to the critical infrastructure context of those Councils.

PHMSA's RESPONSE TO RECOMMENDATIONS

Recommendation #1. Finalize the action plan for implementing the annex provisions and program elements and effectively execute the action plan.

RESPONSE: Concur: As the action plan is a dynamic document, changes and adjustments to milestones are anticipated. PHMSA will particularly pursue issues where the interplay between safety and security may give PHMSA opportunities to share its safety knowledge, operational experience, and its extensive state partnerships in support of TSA's security goals and implementation plans.

PLANNED ACTION: PHMSA will continue to work with its TSA partners to regularly update and prioritize the items on the Action Plan, and then execute those items. The last update to the Action Plan is dated February, 2008. To improve accountability and management visibility, the pipeline security action plan will be updated monthly and forwarded to PHMSA's Chief Safety Officer for review.

Appendix. Agency Comments

Recommendation #2. Amend the annex to delineate the roles and responsibilities of PHMSA and TSA in overseeing and enforcing security regulations for LNG operators.

RESPONSE: Concur. PHMSA will work with TSA and the other agencies with which PHMSA has executed Memoranda of Understanding concerning LNG facilities¹ to determine if further clarification of roles and responsibilities in oversight and enforcement of security regulations for affected LNG operators is warranted. PHMSA will notify the OIG of this determination by June 30, 2008.

PLANNED ACTION: Regardless of the determination, PHMSA will propose to incorporate LNG facility inspections into the Action Plan at the next working group meeting. PHMSA will assist TSA in its communication and work with appropriate State pipeline agencies that have regulatory oversight of peak shaving LNG facilities, which make up the majority of LNG facilities in the Nation. PHMSA also will work with TSA to determine the extent to which the data PHMSA has collected, and its state partners' field activities can inform TSA decisions on requirements of the 9/11 Commission Act and implement any resulting policy decisions.

Recommendation #3. Maximize the strategy used to assess pipeline operators' security plans and guidance to ensure effective and timely execution of congressional mandates in the 9/11 Commission Act. At a minimum, enhancements to the strategy need to include actively engaging PHMSA assistance in inspecting the 100 most critical pipeline operators' pipeline security plans and critical facilities, and developing protocols and conducting vulnerability tests to effectively measure operators' compliance with existing guidance or assess the adequacy of the guidance.

RESPONSE: Concur. PHMSA will work closely with TSA to help execute the pipeline security mandates in the 9/11 Commission Act, as listed in the current Action Plan. When participating in a TSA CSR, PHMSA inspectors participate in an advisory role, based on their safety and regulatory focus, as TSA seeks voluntary operator cooperation on security issues. However, PHMSA inspectors would address a safety issue encountered during a CSR.

PLANNED ACTION: While TSA generally advises PHMSA as they schedule CSR, PHMSA has not participated in the great majority of those reviews. PHMSA completed its FY08 pipeline safety inspection plan well before the OIG completed the investigation, and is into the second quarter of completing the scheduled inspections. PHMSA asked TSA how it intends to inspect the remainder of the top 100 operators' critical facilities. TSA stated it plans to hire consultants to assist them perform inspections of the remaining critical facilities of the top 100 operators. As PHMSA's pipeline inspection resources for FY08 are committed, it is unlikely that PHMSA would participate in these inspections.

PHMSA recognizes that the separate issues of: (1) adequacy of existing standards and guidance, and (2) voluntary compliance with those standards, are both required for successful protection of the Nation's pipeline infrastructure. As TSA and their consultants complete the inspections of the top 100 operators' critical facilities, PHMSA will work with TSA as it compiles and analyzes the results of the reviews to determine the extent to which operators have voluntarily complied with 2002 security standards.

¹ Currently, PHMSA has an MOU with the Federal Energy Regulatory Commission and the U.S. Coast Guard concerning regulatory purview of Waterfront LNG Import/Export facilities.

PHMSA has little experience in covertly assessing the effectiveness of security plans that the OIG discusses in this report and must defer to TSA's Pipeline Security Division, TSA's Office of Security Assessments, and the Protective Security components in DHS for this expertise. Nonetheless, PHMSA also is very interested in working with TSA to review the macro definition used to define the top 100 operators, the variability in compliance among those operators, and the significance of any non-compliances found. PHMSA will continue to work with TSA as they determine if the 2002 security standards and guidance are adequate to ensure the security of pipeline facilities.

Based on the reviews of the Top 100 pipeline operators' compliance with existing standards, and from the review of systematic (and perhaps covert) prospective assessments of vulnerability described by the OIG in the subject report, PHMSA looks forward to assisting TSA to determine if security-focused regulations are needed to ensure the security of the Nation's pipeline infrastructure. Whether regulations are determined to be required or not, PHMSA can assist TSA use program development practices similar to those applied to PHMSA's Integrity Management Programs to help systematize our security support activities. This process is consistent with the actions detailed in the 9/11 Commission Act and also detailed in the current Action Plan.

Sincerely,



Stacey L. Gerard
Assistant Administrator / Chief Safety Officer