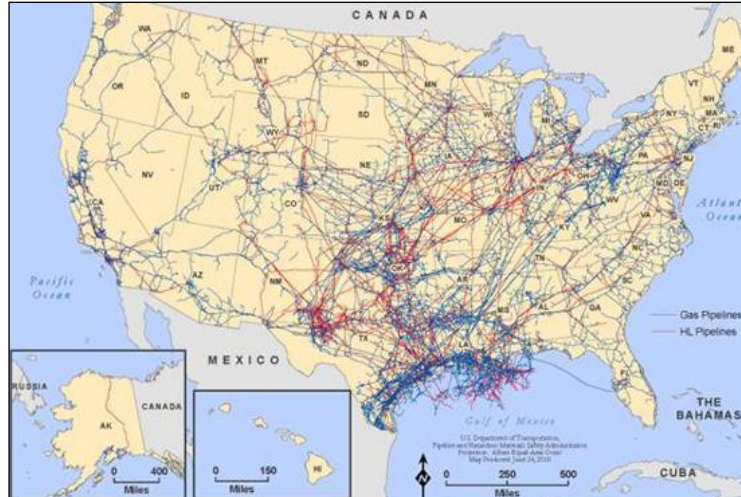


## Pipeline Security for Rural Communities – Introduction

America's pipeline system stretches across the country like the veins and arteries of the human body. This system crosses the United States and is found in urban as well as rural environments. The system includes 2.7 million miles of pipelines, operated by over three thousand companies.<sup>1</sup> There are 212,568 miles of hazardous liquid or carbon dioxide pipeline systems that stretch from production areas to refineries to consumers and manufactures.<sup>2</sup> The pipelines carry not only petroleum products and natural gas, but also other hazardous liquid or gas materials such as anhydrous ammonia, chlorine, and carbon dioxide.<sup>3</sup> In addition to the products being transported, the pipeline system includes critical facilities such as compressor, pumping, regulator, and valve stations, as well as breakout tanks and automatic systems to monitor and control the flow of product through the pipelines. Due to the need of the pipeline infrastructure to reach every part of the country, it is described as “running alternately through remote and densely populated regions” and “vulnerable to accidents and terrorist attack.”<sup>4</sup> As the Surface Division Director Sonya Proctor stated in her statement before the U.S. House of Representatives Committee on Homeland Security Subcommittee (April, 2016),



Natural Hazardous Liquid and Natural Gas Transmission Pipelines  
Source: Pipeline Hazardous Materials and Safety Administration

As evidenced by recent attacks in Brussels, Paris and elsewhere, the terrorist threat has grown increasing complex and diffuse, with the potential for terrorist actors to become radicalized and carry out an attack with little warning. An attack against a pipeline system could result in loss of life and have significant economic effects.<sup>5</sup>

Pipeline attacks could come in a variety of modes, including physical attack (e.g., firearms or improvised explosive devices) or cyber attack.<sup>6</sup> “It is widely documented that terrorist groups around the world often attack energy pipelines and the personnel working there. Through acts of sabotage, bombing and kidnapping, terrorist or insurgent groups may seek to derail the construction of pipelines or the flow of oil or gas. Such attacks have occurred in many countries, including Colombia, Nigeria, Sudan, Algeria, Iraq, and Saudi Arabia.”<sup>7</sup> In the last two decades, Columbian guerillas have attacked the pipelines in that country more than 1,000 times, resulting in the loss of at least 2.9 billion barrels of crude oil.<sup>8</sup> There have been six bombings of Canadian pipelines in British Columbia.<sup>9</sup>

The examination of pipeline ruptures with other causal factors provide a basis for understanding the consequences of a terrorist attack directed at a pipeline. Pipeline explosions have demonstrated their lethality. In 2000, a natural gas pipeline explosion killed nine people camping in a rural location in New Mexico.<sup>10</sup> In two separate pipeline explosions on June 8 and 9, 2010, in Texas, three workers were killed.<sup>11</sup> Eight people were killed and 37 homes were destroyed in the September 2010, San Bruno, CA pipeline explosion.<sup>12</sup> Five people were killed and eight



houses were destroyed in a gas explosion and fire in Allentown, PA in February, 2011 with the estimated property damage from the rupture to be \$2.5 million.<sup>13</sup> Workers in Topeka, KS hit a gas line while installing a sprinkler system on January 30, 2012 causing an explosion that killed a 73-year old woman.<sup>14</sup> On March 12, 2014, two adjacent multiuse five-story buildings were destroyed by a natural gas-fueled explosion and fire resulting in the death of eight people, more than 50 people were injured, and more than 100 families were displaced from their homes in East Harlem, New York. The cost to Consolidated Edison Company of New York, Inc. (ConEdison), of equipment damages, emergency response activities, remediation, and replacement exceeded \$1.9 million.<sup>15</sup> On January 2, 2016 a natural gas pipeline explosion in Oklahoma City, OK injured one resident and caused nearly a half million dollars in damage to dozens of homes.<sup>16</sup>

The purpose of this awareness level, instructor-led course is to bring together rural pipeline security stakeholders including public safety, oil and gas pipeline representatives (large and small), local emergency planners, pertinent federal agencies, and other community stakeholders to recognize pipeline security threats and identify mitigation strategies within their jurisdictions to ensure the rural pipeline sector is secure and resilient.

The importance of securing the U.S. pipeline system was originally addressed in *Homeland Security Presidential Directive (HSPD) 7*, issued December 2003. HSPD-7 designated the U.S. Department of Homeland Security (DHS) as the lead federal agency for pipeline security and directs that DHS and the U.S. Department of Transportation (DOT) collaborate in regulating the transportation of hazardous materials by all modes (including pipelines). DHS's Transportation Security Administration's Surface Transportation Division was instrumental in assisting the RDPC throughout development of this pipeline security course.

As annexes to the National Infrastructure Protection Plan: Partnering for Critical Infrastructure Security and Resilience (NIPP 2013) as set forth in the Presidential Policy Directive 21 (PPD-21), Critical Infrastructure Security and Resilience which replaced HSPD-7, the Sector-Specific Plans (SSPs) for Transportation and Energy both address the efforts needed to improve security and resilience in those sectors which includes pipelines. This course supports the SSPs for Transportation and Energy and also supports the Transportation Sector-Specific Plan Pipeline Modal Annex that was part of the 2010 Transportation SSP. The Plan and the Pipeline Modal Annex were developed, reviewed, and updated using both the Transportation Sector and the Energy Sector Government Coordinating Council (GCC) and Sector Coordinating Council (SCC) frameworks.<sup>17</sup> As stated in the Annex, "a robust, nationwide pipeline security program will instill public confidence in the reliability of the Nation's critical energy infrastructure, enhance public safety, and ensure the continued functioning of other critical infrastructure sectors that depend on secure and reliable supplies of products for consumption."<sup>18</sup>

In the National Preparedness Goal, Second Edition September 2015, released as part of Homeland Security Presidential Directive (HSPD) 9, it states that technological and accidental hazards, such as transportation system failures, chemical spills or releases, have the potential to cause extensive fatalities and severe economic impacts.<sup>19</sup> In addition, the National Preparedness Goal considers cyberattacks to have potential catastrophic consequences. Cybersecurity threats exploit the increased complexity and connectivity of critical infrastructure systems, placing the Nation's security, economy, and public safety and health at risk.<sup>20</sup> This course supports these tenants of the National Preparedness Goal and emphasizes the



importance of preventing pipeline incidents that involve chemical spills or releases as well as cyberattacks.

One of the main DHS Transportation Security Administration (TSA) Surface Division’s objectives to achieve its transportation sector security goals is to increase the level of domain awareness, information sharing, response planning and coordination. Furthermore, the Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) convened a joint Public Awareness Program Working Group (PAPWG) in September 2013 to foster public awareness continuous improvements which resulted in a final report released in May 2016 titled: Pipeline Public Awareness Strengths, Weaknesses, Opportunities, and Threats (SWOT). One of the findings from that report states:

There are numerous examples of operators communicating well with emergency responders; however, there are still weaknesses in the overall effectiveness of pipeline operators’ outreach to emergency responders. Operators are not consistent in adequately identifying, communicating with, and coordinating with all emergency response stakeholders within a community. This lack of emergency responder awareness may also be caused in part by ineffective dissemination of pipeline information within emergency responder organizations even when it is communicated to them by the pipeline operator.<sup>21</sup>

This awareness level course supports the objective of TSA’s Surface Division as well as the recommendations of DOT’s working group and brings together the interdisciplinary stakeholders that may be involved with pipeline security incidents, and enhances the collaboration between pipeline industry stakeholders and the emergency response community in planning, prevention, response, and recovery as they pertain to pipeline security incidents in rural communities.

This course supports the strategic goals of *Presidential Policy Directives 21 (PPD-21) – Critical Infrastructure and Resilience*, *PPD-8 – National Preparedness*, the *National Preparedness Goal* and the Core Capabilities specifically those shown in the table below.

<b>CORE CAPABILITIES</b>
Operational Coordination (Primary)
Intelligence and Information Sharing
Threats and Hazard Identification
Risk Management for Protection Programs and Activities
Interdiction and Disruption
Physical Protective Measures
Economic Recovery



Supporting these capabilities will allow the rural emergency response community, the pipeline industry, and community stakeholders to collaborate, communicate, and share information in order to achieve coordinated awareness, prevention, protection against, and response to pipeline security incidents in a rural community.



## Module 1 – Introduction and Course Overview - Administration Page

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**Duration:**

0.75 hours

**Scope Statement:**

This module includes information on the roles of pipeline stakeholders, including emergency responders and pipeline industry, in the pipeline security planning and response coordinated process. In addition, introductory administrative tasks including a review of the course goals and objectives and a pre-test are included.

**Terminal Learning Objective (TLO):**

At the conclusion of this module, participants will be able to identify the role of pipeline stakeholders in the pipeline security planning and response coordinated process as well articulate the course goals and objectives of the course.

**Enabling Learning Objectives (ELO):**

- ELO 1-1: List the course goals and objectives.
- ELO 1-2: Identify the roles of the pipeline stakeholders (including emergency responders and pipeline industry) in the pipeline security planning and response coordinated process.
- ELO 1-3: Record baseline level of knowledge by completing the pre-test.

**Resources:**

Pre-test

**Instructor to Participant Ratio:**

1:25

**Reference List**

- *Presidential Policy Directive/PPD-8: National Preparedness*  
([http://www.dhs.gov/xabout/laws/gc\\_1215444247124.shtm](http://www.dhs.gov/xabout/laws/gc_1215444247124.shtm))
- *Presidential Policy Directive/PPD-21: Critical Infrastructure Security and Resilience*  
(<https://www.gps.gov/multimedia/presentations/2014/11/ICG/dhs.pdf>)
- *National Preparedness Goal*  
(<https://www.fema.gov/national-preparedness-goal>)
- *National Response Framework (NRF)*  
([https://www.fema.gov/media-library-data/20130726-1914-25045-1246/final\\_national\\_response\\_framework\\_20130501.pdf](https://www.fema.gov/media-library-data/20130726-1914-25045-1246/final_national_response_framework_20130501.pdf))
- *National Incident Management System (NIMS)*  
(<http://www.fema.gov/national-incident-management-system>)
- *FEMA, Federal Interagency Operational Plan – Response and Recovery – Oil/Chemical Annex (2016)*



[https://www.interagencyboard.org/system/files/resources/Final%20%20Oil\\_Chemical\\_Incident\\_Annex%206\\_02\\_16.pdf](https://www.interagencyboard.org/system/files/resources/Final%20%20Oil_Chemical_Incident_Annex%206_02_16.pdf)

- *Transportation Systems Sector Specific Plan, Pipeline Modal Annex*  
(<https://www.hsdl.org/?abstract&did=474337>)
- *Federal Register, 49 CFR Part 195 – Pipeline Safety: Safety of Hazardous Liquid Pipelines. (Most recent amendments 2015)*  
(<https://www.federalregister.gov/documents/2015/10/13/2015-25359/pipeline-safety-safety-of-hazardous-liquid-pipelines>)
- *FEMA, Hazard Mitigation Planning: Practices for Land Use Planning and Development near Pipelines (2015)*  
([https://www.fema.gov/media-library-data/1422297186422-e43ce828d6821027c258e96eae10fd6d/PIPA\\_Hazard\\_Mitigation\\_Primer\\_Final.pdf](https://www.fema.gov/media-library-data/1422297186422-e43ce828d6821027c258e96eae10fd6d/PIPA_Hazard_Mitigation_Primer_Final.pdf))
- *National Infrastructure Protection Plan (NIPP), 2013 (including Supplements and Sector Specific Annexes (Transportation Sector, Energy Sector))*  
(<https://www.dhs.gov/sites/default/files/publications/national-infrastructure-protection-plan-2013-508.pdf>)
- *Developing and Maintaining Emergency Operations Plans, Comprehensive Preparedness Guide (CPG) 101, Version 2.0.*  
([https://www.fema.gov/media-library-data/20130726-1828-25045-0014/cpg\\_101\\_comprehensive\\_preparedness\\_guide\\_developing\\_and\\_maintaining\\_emergency\\_operations\\_plans\\_2010.pdf](https://www.fema.gov/media-library-data/20130726-1828-25045-0014/cpg_101_comprehensive_preparedness_guide_developing_and_maintaining_emergency_operations_plans_2010.pdf))
- *GAO-10-867: PIPELINE SECURITY; TSA Has Taken Actions to Help Strengthen Security, but Could Improve Priority-Setting and Assessment Processes, August 2010*  
(<https://www.gao.gov/assets/310/308800.pdf>)

### Practical Exercise Statement:

N/A

### Assessment Strategy:

- Observation of student participation as well as performance in practical exercises.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.





## Module 2 - Importance of Pipelines - Administration Page

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**Duration:**

0.75 hours

**Scope Statement:**

The participants will be introduced to the importance of pipelines, including the major pipeline stakeholders and the concept of interdependency. In addition, the National Pipeline Mapping System (NPMS) will be reviewed to help identify local pipeline owners and operators as part of the overall planning process.

**Terminal Learning Objective (TLO):**

At the conclusion of this module, the participant will be able to recognize the major stakeholders and operators of the various pipelines across the United States and the issues related to interdependency as well as be able to identify local pipeline owners and operators by using the NPMS as part of the overall planning process.

**Enabling Learning Objectives (ELO):**

- ELO 2.1 – Identify the major stakeholders and owners of the major pipeline systems across the United States.
- ELO 2.2 – Identify local pipeline owners and operators using the National Pipeline Mapping System (NPMS) as part of the overall planning process.
- ELO 2.3 – Describe the economic impact of interdependency among the major pipeline systems and other transportation modes.

**Resources:**

See resources section at the end of this module.

**Instructor to Participant Ratio:**

1:25

**Reference List**

- American Petroleum Institute. *Pipeline 101*.
- Interstate Natural Gas Association of America. *Pipelines 101*.
- U.S. Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration. Pipeline Safety Awareness (PHMSA). *Pipeline 101*.
- DOT PHMSA Public Awareness Program Working Group (PAPWG) Final Report: Pipeline Public Awareness Strengths, Weaknesses, Opportunities, and Threats (SWOT).

**Practical Exercise Statement:**

N/A

**Assessment Strategy:**

- Observation of student participation as well as performance in practical exercises.



- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.





## Module 3 – Pipeline Basics - Administration Page

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**Duration:**

1.0 hours

**Scope Statement:**

In this module, participants will be introduced to basic components of the pipeline system which include: the terminology used in the pipeline industry, types of pipelines, and the materials that move through the pipelines. This module will present materials and information on how to properly identify pipeline locations and possible products.

**Terminal Learning Objective (TLO):**

By the end of this module the participant will be able to recognize and make use of the terminology used in the pipeline industry, recognize the basic system components, the type of materials that flow through the pipelines and how to identify pipelines in the field.

**Enabling Learning Objectives (ELO):**

- ELO 3.1 – List pipeline system components.
- ELO 3.2 – Identify the different types of pipeline systems and the products that can flow through these systems.
- ELO 3.3 – Identify pipelines in the field and the products carried in them.

**Resources:**

See resources section at the end of this module.

**Instructor to Participant Ratio:**

1:25

**Reference List**

- American Petroleum Institute. *Pipeline 101*.
- Interstate Natural Gas Association of America. *Pipelines 101*.
- U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration. Pipeline Safety Awareness. *Pipeline 101*.
- Common Ground Alliance – Call Before You Dig/Call 811. <http://www.call811.com/>

**Practical Exercise Statement:**

N/A

**Assessment Strategy:**

- Observation of student participation as well as performance in practical exercises.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## Module 4 – Government Roles and Responsibilities in Pipeline Security Administration Page

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### Duration:

0.50 hours

### Scope Statement:

This module is designed to introduce participants to the roles and responsibilities of government agencies as they relate to pipeline security as well as associated programs that impact pipeline security. Federal agencies such as the Department of Homeland Security, in particular the Transportation Security Administration (TSA) as well as the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) are key agencies for rural emergency.

### Terminal Learning Objective (TLO):

By the end of this module the participant will be able to identify the roles and responsibilities of governmental agencies as it relates to pipeline security as well as specific governmental security programs that impact pipeline security.

### Enabling Learning Objectives (ELO):

- ELO 4.1 – Identify the roles and responsibilities of three government agencies involved in the protection of the Nation's pipeline critical infrastructure and key resources.
- ELO 4.2 – Identify three government programs that impact pipeline security.

### Resources:

See resources section at the end of this module.

### Instructor to Participant Ratio:

1:25

### Reference List

- National Infrastructure Protection Plan (NIPP), 2013 (including Supplements and Sector Specific Annexes (Transportation Sector, Energy Sector))  
(<https://www.dhs.gov/sites/default/files/publications/national-infrastructure-protection-plan-2013-508.pdf>)
- Federal Register, 49 CFR Part 195 – Pipeline Safety: Safety of Hazardous Liquid Pipelines. (Most recent amendments 2015)  
(<https://www.federalregister.gov/documents/2015/10/13/2015-25359/pipeline-safety-safety-of-hazardous-liquid-pipelines>)
- FEMA, Federal Interagency Operational Plan – Response and Recovery – Oil/Chemical Annex (2016)



([https://www.interagencyboard.org/system/files/resources/Final%20%20Oil\\_Chemical\\_Incident\\_Annex%206\\_02\\_16.pdf](https://www.interagencyboard.org/system/files/resources/Final%20%20Oil_Chemical_Incident_Annex%206_02_16.pdf))

- Congressional Research Service. Pipeline Safety and Security: Federal Programs. 2008.
- Forman, Gary L. Testimony before the House Committee on Homeland Security, Subcommittee on Management, Investigations and Oversight. April 19, 2010. <http://chsdemocrats.house.gov/SiteDocuments/20100419105451-78371.pdf>
- U.S. Government Accountability Office. Pipeline Security. TSA Has Taken Actions to Help Strengthen Security, but Could Improve Priority-Setting and Assessment Processes. August 2010. <http://www.gao.gov/products/GAO-10-867>
- U.S. Department of Homeland Security. Transportation Security Administration. Pipeline Security and Incident Recovery Protocol Plan, March 2010 [http://www.tsa.gov/assets/pdf/pipeline\\_sec\\_and\\_incid\\_recov\\_prot\\_plan.pdf](http://www.tsa.gov/assets/pdf/pipeline_sec_and_incid_recov_prot_plan.pdf)
- U.S. Department of Homeland Security. Transportation Security Administration. Transportation Systems Sector Specific Plan, 2010, <http://www.dhs.gov/xlibrary/assets/nipp-ssp-transportation-systems-2010.pdf>

### **Practical Exercise Statement:**

N/A

### **Assessment Strategy:**

- Observation of student participation as well as performance in practical exercises.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## Module 5 – Industry Roles and Responsibilities in Pipeline Security Administration Page

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### Duration:

0.5 hours

### Scope Statement:

This module is designed to introduce participants to the roles and responsibilities of pipeline industry as it relates to pipeline security as well as specific pipeline security programs that are carried out by private pipeline industry and industry associations.

### Terminal Learning Objective (TLO):

By the end of this module the participant will be able to identify the roles and responsibilities of pipeline industry and trade associations as it relates to pipeline security as well as specific industry security programs that currently exist.

### Enabling Learning Objective (ELO):

- ELO 5.1 – Describe private industry's role and responsibility and associated industry programs that impact pipeline security.
- ELO 5.2 – List the major trade associations associated with the pipeline industry.

### Resources:

See resources section at the end of this module.

### Instructor to Participant Ratio:

1:25

### Reference List

- U.S. Department of Homeland Security. Transportation Security Administration. *Pipeline Security and Incident Recovery Protocol Plan, March 2010*  
[https://www.tsa.gov/sites/default/files/pipeline\\_sec\\_incident\\_recvr\\_protocol\\_plan.pdf](https://www.tsa.gov/sites/default/files/pipeline_sec_incident_recvr_protocol_plan.pdf)
- U.S. Department of Homeland Security. *Transportation Systems Sector Specific Plan. Pipeline Modal Annex. 2010.*

### Practical Exercise Statement:

N/A

### Assessment Strategy:

- Observation of student participation as well as performance in practical exercises.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## Module 6 – Pipeline Incidents / Security Threats - Administration Page

### Duration:

0.75 hours

### Scope Statement:

This module allows for the current threats to the pipeline systems in the United States including cybersecurity threats and the criminal penalties for willfully damaging pipelines and associated components to be discussed as well as what makes pipelines vulnerable to attacks. The examination of pipeline ruptures with other causal factors is also discussed to provide a basis for understanding the consequences of a terrorist attack directed at a pipeline. In addition, international terror attacks on pipeline systems will be reviewed.

### Terminal Learning Objective (TLO):

By the end of this module the participant will be able to list factors that make pipelines vulnerable to attacks, describe national and international pipeline attacks and/or incidents, recognize current threats, and describe the criminal penalties for willfully damaging pipelines and associated components.

### Enabling Learning Objectives (ELO):

- ELO 6.1 – List factors that make pipelines vulnerable to attacks.
- ELO 6.2 – Identify pipeline ruptures or explosion incidents that have taken place in the United States as well as terrorist attacks that have occurred internationally.
- ELO 6.3 – Identify current threats to the pipeline systems in the United States, including cybersecurity.
- ELO 6.4 – Describe the criminal penalties associated with a person willfully damaging pipelines and associated components.

### Resources:

See resources section at the end of this module.

### Instructor to Participant Ratio:

1:25

### Reference List

- U.S. Department of Energy Office of Electricity Delivery and Energy Reliability. *Energy Sector Cybersecurity Framework Implementation Guidance*. January 2015
- U.S. Department of Transportation. Pipeline and Hazardous Material Safety Administration. *Pipeline Incident and Mileage Reports*.
- U.S. Department of Homeland Security. Transportation Security Administration. Office of Intelligence and Analysis. *Modal Threat Analyses: Pipeline*. 2012.

### Practical Exercise Statement:

N/A



### **Assessment Strategy:**

- Observation of student participation as well as performance in practical exercises.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## Module 7– Indicators of Suspicious Activity at a Pipeline-Administration Page

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### Duration:

1.0 hours

### Scope Statement:

This module is designed to present indicators of suspicious activity at a pipeline to the participants. In addition, recommended actions for reporting suspicious activities will be discussed. Man-made activities that may threaten a pipeline are also discussed.

### Terminal Learning Objective (TLO):

By the end of this module the participant will be able to identify: indicators of suspicious activity, recommended action to report suspicious activity, and man-made activities that may threaten a pipeline.

### Enabling Learning Objectives (ELO):

- ELO 7.1 – List the eight signs of terrorism.
- ELO 7.2 – Identify indicators of suspicious activity at a pipeline.
- ELO 7.3 – Identify man-made activities that may threaten a pipeline.
- ELO 7.4 – Describe the recommended actions to take to report suspicious activity.

### Resources:

See resources section at the end of this module.

### Instructor to Participant Ratio:

1:25

### Reference List

- Montgomery County (MD) Police Department. Operation Tripwire. *Potential Indicators of Terrorist Activities*. 2011.
- NCJRS. *Pre-Incident Indicators of Terrorist Incidents: The Identification of Behavioral, Geographic, and Temporal Patterns of Preparatory Conduct*. 2006.
- Rand Corporation. *The Dynamic Terrorist Threat: An Assessment of Group Motivations and Capabilities in a Changing World*. 2004.
- State of Maryland Coordination and Analysis Center. *Suspicious Activities Reference Guide*. 2006.





- U.S. Department of Homeland Security. Transportation Security Administration. *Pipeline Security and Incident Recovery Protocol Plan*. March 2010.
- U.S. Department of Homeland Security. *Transportation Sector-Specific Plan Pipeline Modal Annex*.

### **Practical Exercise Statement:**

NA

### **Assessment Strategy:**

- Observation of student participation especially in facilitated scenario-based discussions.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## Module 8 – Pipeline Security Scenario-Based Activity Administration Page

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**Duration:**

1.0 hours

**Scope Statement:**

Using a scenario-based training event, the participants will collaborate to identify pipeline security threats and generate mitigation strategies for those threats utilizing information about resources (local, state, and federal) and interoperability that have been discussed. Based on the decisions made in the scenario, the participants will have to react to the outcomes presented. All disciplines will be integrated into the scenario to show interoperability and the collaboration required by all affected parties. A Pocket Guide to Pipeline Security Incidents job aid will also be reviewed as it relates to overall planning and response coordination.

**Terminal Learning Objective (TLO):**

At the conclusion of this module, participants will be able to demonstrate effective threat assessment and the ability to identify mitigation strategies and assess outcomes based on decisions made as well as how the Pocket Guide job aid should be used as it relates to overall planning and response coordination.

**Enabling Learning Objective (ELO):**

- ELO 8.1 – Demonstrate effective pipeline threat identification and mitigation strategies by participating in scenario-based activities during which decisions must be made regarding the assessment, identification, and mitigation of pipeline security threats/incidents.
- ELO 8.2 – Demonstrate the use of the Pocket Guide to Pipeline Security Incidents job aid as it relates to overall planning and response coordination.

**Resources:**

Pocket Guide to Pipeline Security Incidents – one per participant

**Instructor to Participant Ratio:**

1:25

**Reference List**

NA

**Practical Exercise Statement:**

Scenario-based training activity utilizing video and decision making strategies.

**Assessment Strategy:**

- Observation of student participation in scenario-based activities.
- Instructor facilitated verbal review of module content.
- Administration of pre-test to assess participant's prior knowledge of the course materials and post-test at the end of the course to assess comprehension.



## **Module 9 – Post-test and Course Evaluation- Administration Page**

### ***Duration:***

0.75 hours

### ***Scope Statement:***

In this final module, a post-test will be administered to the participants. They will also complete a Level 1 standardized course evaluation form and provide feedback on the content and instruction of the course. Participants who complete the post-test at a 70% passing rate and fill out an evaluation form will be issued a Certificate of Completion. Attendance is required with special circumstances handled at the lead instructor's discretion.

### ***Terminal Learning Objective (TLO):***

At the conclusion of this module, participants will complete a comprehensive post-test and course evaluation.

### ***Enabling Learning Objectives (ELO):***

- ELO 9.1 – Demonstrate a foundation of knowledge regarding pipeline security by completing a post-test (with 70% or higher score).
- ELO 9.2 – Identify areas of improvement as well as competency regarding the course content and instruction by completing a course evaluation form.

### ***Resources:***

- Post-test
- Level 1 Standardized Course Evaluation form

### ***Instructor to Participant Ratio:***

1:25

### ***Reference List:***

N/A

### ***Practical Exercise Statement:***

N/A

### ***Assessment Strategy:***

- Observation of student participation
- Instructor facilitated verbal review of module content
- Administration of post-test



# AWR 302: Pipeline Security for Rural Communities

## Agenda

- 8:00am – 8:45am Module 1 - Introduction and Course Overview
- 8:45am – 9:30am Module 2 – Importance of the Pipeline System
- 9:30am – 9:45am Break
- 9:45am – 10:30am Module 3 – Pipeline Basics
- 10:30am – 11:00am Module 4 – Government Roles and Responsibilities in Pipeline Security
- 11:00am – 11:30am Module 5 – Industry Roles and Responsibilities in Pipeline Security
- 11:30am – 12:30pm Lunch
- 12:30pm – 1:30pm Module 6 – Pipeline Incidents/Security Threats
- 1:30pm – 2:30pm Module 7 – Indicators of Suspicious Activity at a Pipeline
- 2:30pm – 2:45pm Break
- 2:45pm – 4:00pm Module 8 – Pipeline Security Scenario-Based Activity and Debriefing (Pocket Guide)
- 4:00pm – 4:30pm Module 9 – Post-test and Course Evaluation



- <sup>1</sup> U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). Pipeline Regulatory Compliance - Inspections. Retrieved from World Wide Web June, 2017. <https://www.phmsa.dot.gov/pipeline/inspections/inspections-overview>
- <sup>2</sup> U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). Annual Report Mileage for Hazardous Liquid or Carbon Dioxide Systems. Retrieved from World Wide Web February 2018. <https://cms.phmsa.dot.gov/data-and-statistics/pipeline/annual-report-mileage-hazardous-liquid-or-carbon-dioxide-systems>
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