OSHA 5810Hazards Recognition and StandardsTraining Course for the US On-Shore Oil and Gas Exploration and Production Industry

Course Overview
OSHA 5810
www.rmecosha.com
Course Goal:
Protect workers by providing companies active in the US on-shore oil and gas exploration and production industry with a foundation for the development of a comprehensive Health and Safety Training Program.

Course Purpose:
The OSHA 5810 course is intended for the full time employees of firms engaged in all phases of US on-shore oil and gas exploration and production. This course provides essential information for students to protect themselves by developing the knowledge and skills to anticipate, recognize, evaluate and control hazards common to the US on-shore oil and gas exploration and production industry.

“Oil and Gas” or “Oil and Gas work site” shall mean those work sites associated with the U.S. on-shore exploration and production oil and gas industry including, but not limited to construction, drilling, completion, well servicing, production, product gathering and processing, and product transmission.
## OSHA Oil & Gas E&P Standards Steering Committee

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Hazards Recognition and Standards Course Development Process

Identify "Typical" O&G Job Site development stages

O&G HSE SME input
- Producers
- Contractors
- Consultants
- O&G Industry Associations

Job/Task Hazard Analysis

Tasks identified with development tasks and hazards by primary job families:
- Site Prep
- Drilling
- Production
- Well Servicing

Training Program

- Intended “experienced” employees requiring safety training as identified by the employer
- Learning Objectives tied to identified hazards
- Industry and OSHA standards tied to Learning Objectives
- Foundation for In-house or more in-depth training programs
## OSHA 5810 Identified Hazards

1. Adverse Weather Conditions,
2. Uneven and/or Unstable Ground,
3. Rough Terrain,
4. Overhead Power Lines,
5. Buried Utilities,
6. Wildlife / Livestock,
7. Unhappy Land Owners,
8. Noise,
9. Day/Night Time Operations,
10. Fast pace
11. Poor Illumination
12. Simultaneous Operations and Site Congestion,
13. Heavy Equipment,
14. Transportation
15. Pressure,
16. Chemicals,
17. Nuisance Dusts
18. Toxic Gases,
19. Radiation,
20. Confined Space Entry,
21. Excavations And Trenches,
22. Communication
23. Roll Over,
24. Blind Spots,
25. Medical emergencies
26. Slips, Trips, Falls,
27. Sprains And Strains,
28. Repetitive Movement
29. Caught Between,
30. Pinched By,
31. Struck Or Crushed By,
32. Fall From Height,
33. Equipment Failure
34. Electrical,
35. Wire Line,
36. Blowout,
37. Hot Work,
38. Fire,
39. Explosives /Explosion,
40. Language
41. Literacy
42. Cultural differences
43. Worker Fatigue, Boredom
44. Workplace Violence
45. Substance abuse, impaired worker
46. Lone Worker.
47. Short Service Employee
48. Worker Fitness /Health
49. Human Error
50. Terrorism
51. Other Environmental Hazards
Key Subject Area Modules

- **Module 1:** Course Introduction and Orientation (2 hours)
- **Module 2:** Safety, Health and Environmental Management Systems
- **Module 3:** Health Hazards and Industrial Hygiene
- **Module 4:** Hazard Communication
- **Module 5:** Personal Protective Equipment
- **Module 6:** Emergency Action Plans
- **Module 7:** Fire Protection and Prevention
- **Module 8:** Control of Hazardous Energy
- **Module 9:** Electrical Hazards
- **Module 10:** Machinery Hazards and Machine Guarding
- **Module 11:** Mechanical Lifting and Hoisting Equipment (Material Handling)
- **Module 12:** Walking and Working Surfaces
- **Module 13:** Fall Protective Systems
- **Module 14:** Confined Space
- **Module 15:** Excavation Trenching and Protective Systems
- **Module 16:** Inspection, Testing and Preventative Maintenance
- **Module 17:** Motor Vehicle Operation
5810 – Pilots – Summer 2012

Williston, ND

Bismarck, ND

McMurray Training Center

Haz Recognition and Standards Course for Oil and Gas E&P
Module 4
Hazardous Communication

Discussion

1. Review the Safety Data Sheet for Diesel (flammable liquid; NFPA 77, Recommended Practice on Static Electricity).

2. What does the SDS say about the containers used in handling flammable liquids?

3. In small group roll play a safety meeting describing the new procedures that this company will implement to cycle the fluid from the sight glass.
OSHA Recordable – Hit Incident --
Derrickman put the pipe screen to the side with a sling, thinking it was secure. He was told to briefly hold off on connecting the pipe screen while they attended to something on the floor. The natural vibrations of the rig caused the sling to loosen its hold of the pipe screen resulting in its fall….hitting the IP in the hard hat.. The pipe screen did not impale the rim of the hat, but it did hit at such an angle (shown) that the result was sheered webbing in the hard hat (as it was designed to do) and the two stitches.

Discussion:
Describe the lessons that can be learned from this incident
1. Storage of tools
2. Use of PPE
3. Situational awareness for workers at height and workers on the ground
Incipient Fire
Fire Extinguishers

Small Group Activity
1. Review Fire Classes
2. List types of personal extinguishers, characteristics and uses
3. Identify the actions in each photo and when and when not the actions are appropriate and by whom
Module 12
Walking Working Surfaces

Small Group:
1. Define the hazards
2. Mitigate the hazards:
   - Design
   - Task Alternatives
   - Industry Best Practice
The workers were in a 15-foot tall tank. Kern County Fire Department crews rushed out, trying to rescue the men. The workers were in the tank testing for leaks that involved adding air pressure. The process also requires having a "false bottom" in the tank. It is not clear if that air pressure built up under the false bottom. People at the site reported hearing a "loud sound, like an explosion," leading to speculation of the false bottom moving or jumping, leading to the men's injuries.

County fire crews reported there were no dangerous fumes in the tank. The tank was a water-filtering system.

Rescue teams at first tried to reach the injured men through the side of the tank, but that didn't work because of the thick walls and number of pipes inside it.

Next, they worked to reach the workers through the top of the tank. It's 10 feet wide but had an opening of 18 inches.

Using a tripod with a rope, a firefighter is sent down in the tank, commonly known as a high point rescue. The firefighter puts a rescue harness on the worker and pulls the worker out of the tank.

The rescue team confirmed the worker had died inside the tank. The fire crews saw no visible trauma.

One worker ended up with a fractured ankle, and the man who died suffered a head injury. The workers were a supervisor, and a welder.

The rescue of the workers took a couple hours, but one victim could not be saved.


Discussion –
1. Briefly describe the process used to test pressure inside a water filtration tank.
2. Identify possible causes for the “explosion.”
3. Define possible administrative controls
4. Debrief the role of the first responders
5. Why are confined space rescue drills necessary?
Module 15
Excavation and Trenching Discussion

Discussion –
1. Review working in and around an open trench (p. 5 MOD 15)
2. Describe the steps used in the excavation pictured to mitigate hazards and why the steps are necessary
OSHA 5810 Mod 15 Excavation, Trenching and Protective Systems

First Step ...know the site ... Due Diligence

Incident –

An ALMOST EXPLOSION

Line Locate  The Company Man called for locate on the SW Corner of new pad development. The Contractor decides to move the rig install to the NW corner. The Company Man calls for a new locate. Line locate person that responds picks up old order (unknowing) informs company man “no lines”. Locate person checked WRONG site from old orders. Contractor did not check the locate paper work took the word of the locate person, dug and hit a gas line. Miraculously the line did not blow.

What went wrong here:
Company man did not take the extra time to check the actual locate paper work from the second locate. Locate person did not check to confirm location of second line locate request.

p. 3 Student Manual MOD 15

McKinney Tx 28Aug12
**Incident Alert**

**Incident Summary:** A crew was pressuring up to test the BOP stack. An initial pressure up to 1500 psi was performed. One of the stack testers, the injured person (IP), went to inspect the BOP stack for leaks before the stack was brought up to the full test pressure. As the IP was walking around the stack, the hold down pin and gland nut assembly blew out of the wellhead, narrowly missing him. However, the IP was struck on his right ankle by a stream of high pressure exiting the wellhead.

**Outcome:**
- **DART**
- IP Broke Right Ankle and required surgery. IP will miss 6 – 8 weeks of work.

**Potential Outcome:**
- Shattered Ankle or Leg
- Loss of limb

**What Went Wrong?**
- Hold down pin and gland nut assembly was not properly secured
- Drilling Prog Warning not heeded
- JSA did not account for proper operating of pin/gland nut

**What Went Right?**
- Well site leaders took immediate action to remove and stabilize the injured person.
- Emergency responders (911) were promptly called and IP was transported to hospital in a timely manner.
- Incident was properly communicated to company management

**Lessons Learned:**
- Inspect gland nut/lock down pin assemblies
- Follow operating procedures
- Minimize or eliminate any exposure to stack while testing

**Action Plan:**
- Revise JSA to confirm all Gland Nuts are:
  - Properly torqued down
  - No threads are showing
- Revise wellhead company’s procedures
  - Include proper position of gland nuts
  - Visual check / confirmation of no threads exposed
Case Study  Improper Assembly of a BOP

LDS while setting bowl protector
- Verify ALL LDS are completely OUT
- If NO pressure is present behind LDS, rotate Packing Nut counterclockwise NO MORE than 1 round to loosen packing
- Rotate PIN counterclockwise until it stops – ensure the packing nut DOES NOT MOVE while rotating pin
- Record this distance – this will be the “out” measurement
- Once the Bowl Protector has landed correctly choose at least 2 lock down screws (180 apart) that will be used to retain bowl protector
- If NO pressure is present behind LDS, rotate Packing Nut counterclockwise NO MORE than 1 round to loosen packing
- HOLD BACK UP on packing nut, rotate PIN clockwise until LIGHT contact is made against bowl protector
- Make up packing nut to 400 ft. lbs. Ensure ALL packing nuts are torqued to 400 ft. lbs. PIN should not move when making up packing nut – hold back up if required

RULE OF THUMB
- NO FULL threads should be showing on ANY lock down screw when FULLY engaged
- ALL PINs should look IDENTICAL when backed out
- NEVER FULLY BACK OUT a lock down screw for ANY REASON without 1st calling FMC

LDS while removing bowl protector
- IF NO pressure is present behind LDS, rotate Packing Nut counterclockwise NO MORE than 1 round to loosen packing
- HOLD BACK UP on packing nut, rotate PIN counterclockwise until the pin stops.
- Measure the distance from the wellhead or spool flange face to the end of the pin to verify the distance. This should be equal to the “out” measurement taken upon installation of Bowl Protector
- Make up packing nut to 400 ft. lbs. Ensure ALL packing nuts are torqued to 400 ft. lbs. PIN should not move when making up packing nut – hold back up if required

Hold back up on packing nut to ensure it does not turn WITH the pin when backing out or engaging

Record Distance X for all disengaged Lock Down Pins on flange. This is the “OUT” distance

Record Distance Y for all disengaged Lock Down Pins on flange. This is the “IN” distance
Module 1: Course Introduction and Orientation

• TO 1: Students will be able to explain the importance of OSHA in providing a safe and healthful workplace for workers covered by OSHA.
  – EO 1.1: Discuss OSHA background information including its purpose, coverage, and provisions.
  – EO 1.2: Explain worker rights under OSHA, including how to file a complaint.
  – EO 1.3: Discuss employer responsibilities under OSHA.
  – EO 1.4: Discuss the inspection process (i.e., what a Compliance Safety and Health Officer (CSHO) does on an inspection).

TO = Terminal Learning Objective
EO = Enabling Learning Objective
Module 2: Injury and Illness Prevention Program -- Safety, Health and Environmental Management Systems

TO 2: Given OSHA standards, guidelines, and industry practices, students will be able to describe the importance of an effective injury and illness prevention program.

EO2.1: Recognize elements of an injury and illness prevention program (e.g., management commitment, employee involvement, hazard identification, hazard prevention and control, training).

EO 2.2: Describe key strategies of a site safety plan.

EO 2.3: Explain the value for conducting job hazard analysis.

EO 2.4: Explain methods for providing a safe work environment during simultaneous operations (SIMOPS).

Key Student “Take-Aways” (student will understand....)

1. Stop work / Pause Work Authority are key strategies in a site safety plan. (EO 2.2)
2. Understand roles and responsibilities outlined in the Safety Plan (EO 2.2)
3. How employee involvement is key to the success of a plan (EO 2.1 and EO 2.2) – suggest emphasizing management commitment, too
4. JSA as a tool for employees to understand and anticipate the hazards present on the work site. (EO 2.3)
5. Challenges of a sim-ops work site (EO 2.4)
6. Challenges of changing work site locations. (could be covered under EO 2.1, 2.2, 2.4)
7. How one’s actions can affect the safety of others and vice versa (could be covered under EO 2.2 and 2.4)
Module 3: Health Hazards (Industrial Hygiene)

TO 3: Given OSHA standards and industry practices, students will be able to describe how to mitigate health hazards common to oil and gas worksites.

EO 3.1: Recognize health hazards common to oil and gas work sites (e.g., chemical, biological, noise, ergonomic related, heat stress).
EO 3.2: Recognize routes of entry for chemicals into the body, including how they can be transmitted to others.
EO 3.3: Describe health effects (e.g., acute, chronic) that result from various chemical exposures.
EO 3.4: Describe types of controls (e.g., engineering, administrative, personal protective equipment) for protecting against health hazards.

Key Student “Take-Aways”

- List the most common health hazard and the routes of entry (EO 3.2)
- Tell how chronic affects from chemicals are subtle (EO 3.3)
- List methods in which an exposure can be transmitted to others (EO 3.2)
- Controlling chemical hazards through work practice precautions (Engineering, Admin, PE) (EO 3.4)
- Show basic monitoring methods to mitigate risk (could be discussed under EO 3.4)
- Show how to use health hazard job aid resources - Having students use the job aids should be part of every module.
Module 4: Chemical Hazard Communication at the Work Site

EO 4.1: Identify hazard classification (health and physical hazards) of chemicals
EO 4.2: Locate hazard information on a Safety Data Sheet (SDS).
EO 4.3: Recognize hazard warnings (e.g., labels, pictograms, signage) that may be encountered at an Oil and Gas work site.
EO 4.4: Explain how to locate hazard communication information (e.g., written program, SDSs) at the worksite

Key Student “Take-Aways”

- List the hazard classifications of chemicals (EO 4.1)
- Show knowledge of label and signage use to communicate hazards (EO 4.3)
- Tell how to locate the written communication plan on the job site (EO 4.4)
- Show to locate information from an SDS and where SDS should be posted on the job site (EO 4.2 and 4.4)
- Familiarity with the GHS using the ERG (job aid).
Module 5: Personal Protective Equipment

TO 5: Given OSHA standards and industry practices, students will be able to describe the importance of wearing appropriate personal protective equipment (PPE) at Oil and Gas work sites.

EO 5.1: Recognize the different types of PPE, including their limitations, used at Oil and Gas work sites.

EO 5.2: Describe employer responsibilities related to PPE (e.g., hazard assessments, training, pay for PPE).

EO 5.3: Describe employee responsibilities related to PPE (e.g., properly inspect, don, wear, doff appropriate PPE; properly maintain and store; report damaged PPE).

Key Student “Take-Aways”

- Discuss the importance of a Certified PPE Hazard Assessment, its elements, and its application. (EO 5.2)
- List the available types, application and limitations of PPE (EO 5.1)
- Identify the Employer and Employee responsibilities to obtain and use PPE (EOs 5.2 and 5.3).
- List the Inspection and use criteria for PPE, including the manufacturer’s recommendations (EO 5.3)
- Show knowledge of specific training and retraining requirements for PPE usage and employer specific requirements. (EOs 5.2 and 5.3)
- Demonstrate the donning and doffing of basic PPE common to an Oil and Gas work site. (EO 5.3)
Module 6: Emergency Action Plans

TO 6: Given OSHA standards and industry practices, students will be able to explain their role in the emergency action plan at an Oil and Gas work site.

EO 6.1: Recognize common types of emergencies that may be encountered at Oil and Gas work sites based on location.

EO 6.2: Explain the procedures identified in the emergency action plan (EAP), including emergency evacuation.

EO 6.3: Discuss the difference between emergency evacuation under the EAP versus emergency response, including the additional training requirements.

EO 6.4: Explain the importance of knowing the location of equipment (e.g., emergency showers, eye wash stations, first aid kits) used in emergencies.

Key Student “Take-Aways”

1. List most common types of emergencies (EO 6.1)
2. Show knowledge of how to apply the EAP to protect self (EO 6.2)
3. Show knowledge of worker roles and responsibilities in an emergency based on level of training completed (EO 6.2)
4. Demonstrate knowledge of worker roles when participating in emergency response drills (EO 6.3)
5. Identify the additional training required to respond to an emergency (EO 6.3)
Module 7: Fire Protection and Prevention

TO 7: Given OSHA standards and industry practices, students will be able to describe mitigation of fire hazards.

EO 7.1: Identify types of flammable substances common at Oil and Gas work sites.
EO 7.2: Explain fire classifications.
EO 7.3: Recognize fire stages, including fire behavior
EO 7.4: Explain the use of fire protection equipment (e.g., capabilities, limitations).
EO 7.5: Discuss fire prevention procedures (e.g., fire prevention plan, hot work permits, well control practices).
EO 7.6: Discuss fire protection/prevention training requirements.

Key Student “Take-Aways”

1. Describe worker role as detailed in the fire prevention plan (EO 7.5 and 7.6)
2. Show knowledge of fire and fire behavior (EOs 7.2 and 7.3)
3. Understand sources of ignition and control of the sources (EOs 7.1, 7.4 and 7.5)
4. Show knowledge of incipient fire protection equipment and its limitations (EOs 7.3 and 7.4)
5. Discuss why fire drills are important in anticipating and controlling fire hazards. (EO 7.6)
Module 8: Control of Hazardous Energy

TO 8: Given OSHA standards and industry practices, students will be able to describe procedures used in the control of hazardous energy.

EO 8.1: Recognize sources of hazardous energy.
EO 8.2: Identify methods of energy control (e.g., lockout, tagout, block-and-bleed).
EO 8.3: Explain the job categories, including the training requirements, involved in the control of hazardous energy.
EO 8.4: Identify proper application/removal of energy isolations devices, including energy isolation verification.
EO 8.6: Explain group lockout procedures as it applies to multi-employer worksites (or SIMOPS).

Key Student “Take-Aways”

- Identify hazardous energy sources. (EO 8.1)
- List methods for controlling hazardous energy at ALL source points. (EOs 8.3 and 8.4)
- Identify the basics of LOTO tools and methods (EOs 8.2 and 8.3)
- Discuss how LOTO methods can differ based on task and or job site (EOs 8.2, 8.3, 8.6)
- Discuss process to identify all LOTOs on multiple contractor sites. (EO 8.6)
- Define the methods of LOTO communications on SIMOPS. (EO 8.6)
## Module 9: Electrical Hazards

TO 9: Given OSHA standards and industry practices, students will be able to describe the mitigation of electrical hazards.

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<tr>
<th>EO 9.1: Recognize the hazards of electricity.</th>
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<td>EO 9.2: Discuss the inspection of electrical equipment.</td>
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<td>EO 9.3: Identify the proper installation/use of electrical equipment (e.g., grounding, bonding).</td>
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<td>EO 9.4: List electrical equipment classifications, including their associated hazards.</td>
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<td>EO 9.5: Describe safety-related work practices, including the required PPE.</td>
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<td>EO 9.6: Discuss training requirements for qualified/non-qualified persons</td>
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### Key Student “Take-Aways”

1. Describe how electricity can pose hazards on the job site. (EO 9.1)
2. Identify the limitations of the non-qualified person when working with electrical equipment. (EO 9.6)
3. Discuss how knowledge of electrical equipment classifications controls hazards. (EO 9.4)
4. Discuss sources of static electricity and control of associated hazards. (EOs 9.1 and 9.3)
5. Identify the classifications of electrical equipment and their associated hazards (EO 9.4)
6. Define the additional training required to become a qualified person (EO 9.6)
Module 10: Machinery Hazards and Machine Guarding

TO 10: Given OSHA standards and industry practices, students will be able to describe the mitigation of unguarded machinery

EO 10.1: Recognize the hazards of unguarded machinery.
EO 10.2: Identify common pieces of equipment that require guarding.
EO 10.3: Identify machine guarding methods (e.g., guards, devices).
EO 10.4: Discuss machine inspection requirements.

Key Student “Take-Aways”

- Identify common pieces of equipment that require guarding (EO 10.2)
- Describe methods to assesses when and how machinery must be guarded (EO 10.4)
- List the different methods of guarding (EO 10.3)
Module 11: Mechanical Lifting and Hoisting Equipment (Material Handling)

TO 11: Given OSHA standards and industry practices, students will be able to describe the mitigation of material handling (lifting/hoisting equipment) hazards.

EO 11.1: Identify material lifting equipment (e.g., cranes, hoists, forklifts).
EO 11.2: Recognize material handling hazards (e.g., struck-by, caught-in).
EO 11.3: Describe safe material handling requirements/best practices (e.g., inspections, maintenance, training, transporting, storage, and securing loads).

Key Student “Take-Aways”

1. Identify the caught between and struck by hazards associated with poorly executed loading, lifting, and securing of materials. (EO 11.2)
2. Discuss industry best practices for transporting and securing loads (EO 11.3)
3. Identify the different types of equipment used for lifting and hoisting including requirements for use specific to manufacturer specifications. (EO 11.1)
4. Discuss the importance of regular inspections and maintenance of lifting/hoisting equipment. (EO 11.3)
5. Identify the additional training requirements for crane operations (EO 11.3)
Module 12: Walking and Working Surfaces

TO 12: Given OSHA standards and industry practices, students will be able to describe the mitigation of walking/working surface hazards.

EO 12.1: Recognize walking/working surface hazards
EO 12.2: Recognize risky behaviors that can lead to slips, trips, falls.
EO 12.3: Recognize the importance of good housekeeping.
EO 12.4: Discuss safety requirements for openings (e.g. hole, wall).
EO 12.5: Discuss safety requirements for stairs, including inspection requirements.
EO 12.6: Discuss safety requirements for ladders, including inspection requirements

Key Student “Take-Aways”

- Identify causes of slips, trips and falls. (EO 12.1)
- Discuss the importance of housekeeping on the job site (EO 12.3)
- Describe hazards of unsafe work practices
Module 13: Fall Protective Systems

TO 13: Given OSHA standards and industry practices, students will be able to describe the mitigation of fall hazards.

EO 13.1: Recognize fall hazards.
EO 13.2: Identify components of fall prevention/protection systems, including inspection requirements.
EO 13.3: Explain fall protection training requirements, including proper use of personal fall arrest systems.
EO 13.4: Discuss the requirement for rescue-trained personnel availability when working at height.

Key Student “Take-Aways”

- Describe basic fall protection and prevention techniques (EO 13.2)
- Identify principles of using PFAS (EO 13.3)
- Discuss the purpose of regular practice of rescue from heights (EO 13.3)
- Discuss the need for specific training in the use and application of PFAS (EO 13.4)
Module 14: Confined Space

TO 14: Given OSHA standards and industry practices, students will be able to recognize requirements before entering permit-required confined spaces (PRCS) located on Oil and Gas work sites.

EO 14.1 Recognize confined spaces common to the Oil and Gas industry.
EO 14.2 Recognize hazards in confined spaces that create a permit-required confined space.
EO 14.3 Recognize the procedures for permit space entry (e.g., training as authorized entrant, trained attendant present, completed and signed entry permit by entry supervisor, atmospheric testing and monitoring, appropriate equipment, rescue).
EO 14.4 Identify training requirements for personnel conducting PRCS entry operations.
EO 14.5 Recognize other options (e.g., perform work without entering the permit space; reclassification by eliminating all hazards; alternate procedures) for entering permit spaces.

Key Student “Take-Aways”

- Recognize confined spaces and the difference between permit required and non-PRCS (EO 14.2)
- Identify common spaces in O&G industry (EO 14.1)
- Discuss and identify alternatives to PRCS entry (EO 14.5)
- List the requirements for PRCS entry (EO 14.3)
- Identify the training necessary for personnel conducting PRCS entry operations (EO 14.4)
Module 15: Excavation, Trenching and Protective Systems

TO 15: Given OSHA standards and industry practices, students will be able to describe the mitigation of excavation operation hazards.

EO 15.1: Recognize excavation operation hazards.
EO 15.2: Explain the responsibilities of a competent person.
EO 15.3: Discuss training requirements for working in excavations.
EO 15.4: Identify protective system requirements (e.g., sloping, shoring, shielding).

Key Student “Take-Aways”

- Identify cave in/engulfment hazards (EO 15.1)
- Discuss the importance of locates and consequences of cutting lines (EOs 15.2 and 15.3)
- Discuss hazard controls that can prevent cave in/engulfment (EO 15.4)
- Describe role and requirements’ of competent person (EO 15.2)
Module 16: Inspection, Testing and Preventative Maintenance

TO 16: Given OSHA standards and industry practices, students will be able to describe preventative maintenance plans for oil and gas operations equipment.

EO 16.1: Recognize the hazards associated with defective equipment (e.g., failed, improperly installed, unmaintained).
EO 16.2: Explain equipment maintenance schedule requirements, including inspections.
EO 16.3: Recognize the importance of following maintenance procedures (e.g., properly matching valves, flanges, gaskets).
EO 16.4: Discuss training requirements for equipment servicing.

Key Student “Take-Aways”

- Recognize the hazards associated with failed or improperly installed equipment. (EO 16.1)
- Discuss the importance of monitoring gauges when inspecting process equipment. (EO 16.2)
- Recognize the importance of properly matching valves, flanges and gaskets. (EO 16.3)
- Recognize consequences of improperly installed or maintained equipment (EO 16.1)
- Discuss the importance of daily equipment inspections (EO 16.2)
Module 17: Motor Vehicle Operation

TO 17: Given State, Federal, Industry, and Corporate requirements and industry practices, students will be able describe the safe operation of vehicles used for the transport of personnel and materials common to Oil and Gas work sites.

EO 17.1: Recognize hazards associated with motor vehicle operation.
EO 17.2: Explain vehicle safety inspection requirements.
EO 17.3: Identify methods to prevent distracted driving.
EO 17.4: Discuss requirements for securing loads on vehicles, including load limits.
EO 17.5: Recognize requirements for the movement of specialized equipment (e.g., rigs).

Key Student “Take-Aways”

1. Recognize hazards of motor vehicle operation (EO 17.1)
2. Identify methods to control the hazards of distracted driving (EO 17.3)
3. Discuss pre-trip inspection techniques (EO 17.2)
4. Describe proper load securement (EO 17.4)
5. Identify hazards associated with rolling equipment used during RIG MOVE operations (17.5)
Module 18: Class Wrap-Up and “So What” exercise

TO 18: Students will be able to demonstrate an integration of the information presented and practiced during the course.

Class Closing and Wrap-Up

Students will be asked reflect on the materials presented during the last 4 days of classroom work and incorporate that information into a final exercise. The exercise will be an individual exercise based on a pre-prepared scenario. Students will also be required to write a “Safety” pledge to themselves indicating what 3 or more behaviors or practices they implementing on their return home and their workplace.