Level One

MODULE 66101-02 – INTRODUCTION TO THE PIPELINE INDUSTRY

1. Explain the basic functions and purposes of pipelines and facilities and identify the characteristics and hazards of common pipeline products.
2. Identify maps and drawings used to depict pipelines and facilities.
3. Explain the roles of control personnel and equipment in the overall operation of a pipeline.
4. Explain liquid pipeline hydraulics and gas pipeline pneumatics.
5. Explain the types and purposes of pipeline equipment.
6. Explain pipeline electrical power systems and corrosion control.
7. Review operations, maintenance, and emergency procedures and perform documentation required for pipeline operations.

MODULE 66102-02 – LIQUID PIPELINE GENERAL ABNORMAL OPERATING CONDITIONS

1. Recognize and react to abnormal facility conditions.
2. Recognize and react to activation of a safety device.
3. Recognize and react to communications failures.
4. Recognize and react to power interruptions.
5. Respond appropriately to fire, explosions, and natural disasters.
6. Recognize and react to pipeline system damage.
7. Recognize and react to unexpected hazardous liquid or carbon dioxide (CO2) leaks.
8. Recognize and react to unexplained pressure deviations.

MODULE 61103-02 – LOCATING PIPELINE AND CABLE (CT 14.1 AND 17.1)

1. Explain the One-Call notification system.
2. Identify and explain the types of pipe and cable found underground.
3. Identify and explain the types of equipment used to locate underground pipe and cable (CT 14.1 and 17.1).
4. Perform approved procedures to accurately locate underground pipe and cable (CT 14.1 and 17.1).

MODULE 61104-02 – MEASURE PIT DEPTH AND WALL THICKNESS (CT 8.1, 8.2, AND 8.3)

1. Using a pit gauge, measure pitting or other metal loss features to pipeline structures and identify conditions requiring corrective action (CT 8.1).
2. Use a D-Scan Ultrasonic Thickness (UT) Meter to accurately collect and record nominal wall thickness readings on a pipeline or other coated structure (CT 8.2).
3. Obtain accurate measurements of localized corrosion to be used for calculating remaining pipe strength per B31G or RSTRENG (CT 8.3).
MODULE 61105-02 – INSPECT BURIED AND SUBMERGED PIPE WHEN EXPOSED
(CT 5.1, 5.2, AND 5.3)

1. Perform inspection of the pipe and coating for evidence of damage and/or abnormalities (CT 5.1).
2. Examine exposed pipe to identify any areas of corrosion (CT 5.2).
3. Perform inspection of the pipe coating, noting its condition whenever the pipe is exposed (CT 5.3).
4. Document the location of corrosion and damage to a buried pipeline.

MODULE 61106-02 – ABOVEGROUND PIPE COATING AND INSPECTION
(CT 7.1, 7.2, 7.3, 7.5, 13.1, AND 13.2)

1. Describe the requirements for surface preparation for aboveground pipe (CT 7.1 and 7.2).
3. Visually inspect the quality of the surface preparation (CT 7.2, 7.3, and 13.2).
4. Inspect the quality of the surface preparation by checking the surface profile (CT 7.2).
5. Properly select a coating to be used.
6. Properly apply a coating to aboveground pipe (CT 7.5).

MODULE 61107-02 – APPLY/REPAIR EXTERNAL COATINGS ON BURIED/SUBMERGED PIPE (CT 13.4)

1. Select a coating for buried or submerged piping.
2. Remove coating from buried or submerged pipe using chemical strippers or blasting systems. (CT 13.4).
3. Apply coatings with a brush and roller.
4. Apply coatings with a conventional spray system.

MODULE 61108-02 – CATHODIC PROTECTION MEASUREMENT (CT 1.1, 1.5, 3.1, AND 3.2)

1. Explain the basic theory of cathodic protection (CP).
2. Define galvanic and impressed current CP and explain the advantages and limitations of each system.
3. Demonstrate how to use instrumentation and meters to monitor CP systems (CT 1.1).
4. Measure structure-to-soil potentials (CT 1.1).
5. Inspect and perform electrical tests of bonds.
6. Obtain voltage and current output readings from a rectifier (CT 3.1).
7. Check proper operation of a rectifier (CT 3.2).
8. Interpret and test isolation devices (CT 1.5).

MODULE 61109-02 – TEST STATION REPAIR (CT 2.1, 2.2, 2.3, AND 2.4)

1. Identify test lead damage (CT 2.1 and 2.2).
2. Repair a test lead and verify that the repair was performed effectively (CT 2.2).
3. Install test leads by non-exothermic welding methods (CT 2.3).
4. Install test leads by exothermic welding methods (CT 2.4).
MODULE 6110-02 – INSPECT INTERNAL PIPE SURFACES (CT 12)

1. Properly orient the pipe to be removed by identifying the top, bottom, left side, right side, upstream direction, and downstream direction (CT 12).
2. Recognize internal corrosion (CT 12).
3. Properly operate wall thickness and pit depth measurement equipment (CT 12).

MODULE 6111-02 – INTERNAL CORROSION CONTROL (CT 10.1, 10.2, AND 11)

1. Safely insert and retract corrosion coupons and document vital information (CT 10.1).
2. Accurately record readings of probes with corrosion measurement tools (CT 10.2).
3. Adjust inhibitor injection rates to achieve an acceptable company standard (CT 11).
Module 61201-02 – Install Cathodic Protection Systems (CT 9.2, 9.3, and 9.4)

1. Describe the information that must be gathered when planning a cathodic protection system.
2. Explain how to select the system components.
3. Describe installation techniques for galvanic and impressed current systems (CT 9.2 and 9.4).
4. Perform rectifier installation (CT 9.3).

Module 61202-02 – Maintain and Repair Rectifiers (CT 4)

1. Describe the characteristics of cathodic protection rectifiers.
2. Describe the functions of typical rectifier components.
3. Describe troubleshooting techniques for rectifier and bond connections (CT 4.1).
4. Describe the common repair process for a rectifier (CT 4.2).
5. Describe the adjustment procedures for a rectifier (CT 4.3).

Module 61203-02 – Mitigate Interference (CT 1.3 and 9.1)

1. Identify the sources of interference current in a cathodic protection system (CT 1.3).
2. Describe the techniques used to test for mitigation in a cathodic protection system (CT 9.1).

Module 61204-02 – Test and Repair Shorted Casings (CT 9.5)

1. Identify causes of shorted casings.
2. Identify a shorted casing.
3. Test for shorted casings.
4. Identify methods for repairing shorted casings.
5. Describe the use of insulated fittings.

Module 61205-02 – Conduct Close Interval Survey (CT 1.2 and 1.4)

1. Identify common close interval survey equipment (CT 1.2).
2. Describe the common methods to perform a close interval survey (CT 1.2).
3. Describe the major steps in performing a close interval survey (CT 1.2).
4. Describe inspecting and testing bonds and protective devices (CT 1.4).

Module 61206-02 – Perform Coating Inspection (CT 7.7)

1. Describe the required pre-inspection activities.
2. Perform quality inspections (CT 7.7).
3. Identify and explain causes of coating failures (CT 7.7).

Module 61207-02 – Perform High-Pressure Blasting/Surface Preparation (CT 7.4 and 13.3)

1. Identify and explain basic abrasive blast system equipment.
2. Effectively and safely operate basic abrasive blast system equipment (CT 7.4 and CT 13.3).
3. Describe the characteristics of blast cleaning media (CT 7.4 and CT 13.3).
4. Explain preparation standards, profiling, and inspection techniques (CT 7.4 and CT 13.3).
5. Prepare the surface according to manufacturer’s specifications and in accordance to company safety and environmental guidelines (CT 7.4 and CT 13.3).
1. Identify and explain different coating types (CT 13.5).
2. Determine whether or not the coating is compatible with environmental conditions, the substrate to be coated, any related job-site conditions, or any other requirements of the job (CT 7.6)
3. Prepare the surface for coating application according to manufacturer specification (CT 7.6 and CT 13.5).
4. Identify and explain the different spray application systems used for coating.
5. Apply coating according to manufacturer specifications (CT 7.6 and CT 13.5).
Level One

MODULE 66101-02 - INTRODUCTION TO THE PIPELINE INDUSTRY

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Copies of Quick Quiz
Module Examinations
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Copies of your company’s policy and procedures manual
Samples of P&IDs, blueprints, and strip maps/alignment sheets
Posterboard or other large sheets of paper
Colored markers
Assorted valves
Copies of API 650 and API 653
Copies of API 510 and 2510
Assorted fittings
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid), including Parts 192.327 and 195.248
Assorted corrosion coupons
Various examples of documentation, including:
Operations logs
Work orders
Event logs
MODULE 66102-02 - LIQUID PIPELINE GENERAL ABNORMAL OPERATING CONDITIONS

- Transparencies
- Markers/chalk
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper

Module Examinations
- Overhead projector and screen
- Whiteboard/chalkboard
- Appropriate personal protective equipment
- Copies of your local code
- Photos of damaged pipeline supports or other pipeline components
- Copies of a sample Safety-Related Condition Report Form
- Copies of the Code of Federal Regulations, Title 49, Part 195

MODULE 61103-02 - LOCATING PIPELINE AND CABLE (CT 14.1 AND 17.1)

- Whiteboard/chalkboard
- Markers/chalk
- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper
- Appropriate personal protective equipment
- Copies of your company’s policy and procedures manual
- Copies of a pipeline strip map
- Copies of a pipeline alignment sheet
- Ferromagnetic locators
- Stick metal detectors, split box locators, flag markers
- Copies of 49 CFR 195.250 and 192.325
- Copies of the Performance Verifications for Covered Tasks 14.1 and 17.1

Module Examinations
- Performance Profile Sheets
MODULE 61104-02 - MEASURE PIT DEPTH AND WALL THICKNESS (CT 8.1, 8.2, AND 8.3)

- Transparencies
- Markers/chalk
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper
- Module Examinations
- Performance Profile Sheets
- Overhead projector and screen
- Whiteboard/chalkboard
- Appropriate personal protective equipment
- Copies of your company’s policies and procedures manual
- Copies of 49 CFR Part 195 (Liquid) and 49 CFR 192 (Gas)
- Copies of Performance Verifications for Covered Tasks 8.1, 8.2, 8.3
- Mechanical and dial pit gauges, some with worn points
- Sections of pitted pipe, corroded, and coated or uncoated pipe
- Dial pit gauges with manufacturer’s instruction
- Mechanical pit gauges with manufacturer’s instruction
- Ultrasonic meters with operating manuals
- Velocity of sound charts
- Couplants
- Graph paper
- Carbon paper
- Lumber pencils
- Pipeline inspection report forms
- Pipe cleaning materials
OVERHEAD PROJECTOR AND SCREEN
TRANSPARENCIES
BLANK ACETATE SHEETS
TRANSPARENCY PENS
WHITEBOARD/CHALKBOARD
MARKERS/CHALK
APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT
PENCILS AND SCRATCH PAPER
COPIES OF YOUR LOCAL CODE
SECTION OF PIPE WITH ALLIGATEDED COAL TAR COATING
ACCESS TO A BURIED PIPELINE AND NECESSARY EXTERIOR INSPECTION EQUIPMENT
ACCESS TO AN OPENED, BURIED PIPELINE AND NECESSARY INTERIOR INSPECTION EQUIPMENT
MECHANICAL PIT GAUGES, DIAL PIT GAUGES, AND MICROMETER PIT GAUGES
SECTIONS OF PITTED PIPE
EQUIPMENT NEEDED TO INSPECT A BURIED PIPE FOR PHYSICAL DAMAGE AND EXTERNAL CORROSION
EQUIPMENT NEEDED TO INSPECT THE CONDITION OF EXTERNAL COATINGS ON BURIED OR SUBMERGED PIPE
MODULE EXAMINATIONS
PERFORMANCE PROFILE SHEETS
COPIES OF QUICK QUIZ
COPIES OF THE PERFORMANCE VERIFICATIONS ASSOCIATED WITH THIS MODULE (5.1, 5.2, AND 5.3)
MO DULE 61106-02 - ABOVEGROUND PIPE COATING AND INSPECTION
(CT 7.1, 7.2, 7.3, 7.5, 13.1, AND 13.2)

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of Performance Verifications for Covered Tasks 7 and 13
Overhead projector and screen
Whiteboard/chalkboard
Appropriate personal protective equipment
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
Copies of your company policy and procedures manual
Copies of Figure 4 with the callouts covered
Spray equipment with a wand assembly safety latch
Protective clothing
Gloves
Helmet with screen visor
Goggles
A variety of pressure washing nozzles, tips, and accessories, including:
  - 0-, 15-, 25-, and 40-degree tips
  - Power scrub brushes
  - Telescoping extensions
  - Horizontal scrubbers
  - Rotating water blast nozzles
  - Variable tip nozzles
  - Rotatable tip nozzles
  - Wet abrasive injectors
A variety of common hand tools, including:
  - Abrasive pads
  - Scrapers
  - Putty knives
  - Wire brushes
  - Chipping hammers
  - Surfaces that require cleaning
A variety of power tools, including:
  - Grinders
  - Sanders
  - Power files
  - Needle guns
  - Rotary impact power tools
  - Vacuum shrouds
Inspection tools, including:
  Profile comparators
  Profile gauges
  Replica tape
  Practice surfaces for preparation and inspection
  Sling psychrometers
  Electric hydrometers
  Surface thermometers
Sample shapes and styles of brushes of various quality
A variety of brushes and rollers
Coatings
Cleaned surfaces for applying coatings
Materials to clean the brushes and roller covers
Roller covers
Brush comb or wire brush
Rags
Brush spinner
Roller spinner
Combination tool
MODULE 61107-02 - APPLY AND REPAIR EXTERNAL COATINGS ON BURIED AND SUBMERGED PIPE (CT 13.4)

- Transparencies
- Markers/chalk
- Blank acetate sheets
- Transparency pens
- Pencils and scratch paper
- Module Examinations
- Performance Profile Sheets
- Copies of Quick Quiz
- Copies of Performance Verifications for Covered Task 13
- Overhead projector and screen
- Whiteboard/chalkboard
- Appropriate personal protective equipment
- Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
- Copies of your company policy and procedures manual
- Manufacturers’ product information data sheets for coating
- SSPC-VIS 1 photographs that illustrate each grade of steel cleanliness
- A variety of steel surface samples
- A variety of surface profiling instruments, including:
  - Profile comparator
  - Profile gauge
  - Replica tape
- A variety of brushes
- Containers filled with coating
- Practice surfaces for applying coating with a brush
- A variety of rollers
- Trays filled with coating
- Practice surfaces for applying coating with a roller
- A variety of practice surfaces
- Conventional and airless spray systems
- Coatings
- Respirators
MODULE 61108-02 - CATHODIC PROTECTION MEASUREMENT (CT 1.1, 1.5, 3.1, AND 3.2)

Overhead projector and screen
Transparencies
Blank acetate sheets
Whiteboard/chalkboard
Transparency pens
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Copies of your company’s policy and procedures manual
Copies of 49 CFR 192 and 195
Copies of API 650-653
Test equipment for measuring structure-to-soil electrolyte potential
Forms for recording soil potential
Digital voltmeter
Forms for recording rectifier readings
Ammeters
Access to a rectifier with and without a meter installed and with and without a shunt
Copies of NACE Standard RP-01-69
Samples of piping with various coating defects
Several types of voltmeters with various features
Ammeters, various types of shunts, and access to measurable circuits
Soil resistance meters, soil resistance pins, selector boxes, and soil boxes
Variety of copper sulfate electrodes
Multimeters and audio and visual continuity testers
Multimeters with damaged and undamaged test leads, probes, and plugs
Nonmetallic abrasive pads, distilled water, and copper sulfate crystals
Insulation materials and access to existing flanges that need to be insulated
Access to functioning and defective insulated flanges and appropriate measuring equipment
Isolation surge protectors and polarization cells
Module Examinations
Performance Profile Sheets
Copies of the Performance Verifications for Covered Tasks 1.1, 1.5, 3.1, and 3.2
MODULE 61109-02 - TEST STATION REPAIR (CT 2.1, 2.2, 2.3, AND 2.4)

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Copies of your company’s policy and procedures manual
- Copies of 49 CFR 192.469
- Copper wire, soldering iron, sponge, water, tinning paste, solder
- Appropriate splicing equipment and materials
- Appropriate equipment and materials for metallurgical bonding
- Appropriate equipment and materials for the four types of mechanical bonding
- Multimeters or continuity testers
- Copies of sample company and OSHA procedures regarding exposing underground pipeline
- Segments or photos of damaged pipe
- Module Examinations
- Performance Profile Sheets
- Copies of the Performance Verifications for Covered Tasks 2.1, 2.2, 2.3, and 2.4

MODULE 61110-02 - INSPECT INTERNAL PIPE SURFACES (CT 12)

- Overhead projector and screen
- Transparencies
- Blank acetate sheets
- Transparency pens
- Whiteboard/chalkboard
- Markers/chalk
- Pencils and scratch paper
- Appropriate personal protective equipment
- Copies of your company’s policy and procedures manual
- Compasses
- Pipeline inspection documents, two sets
- Compasses, pit gauges, pocket knives, and plastic for wrapping the samples
- Field corrosion report forms
- Examples of coating failures
- Corroded pipe sections
- Company forms for recording pit length and depth measurements
- Ultrasonic thickness gauges and calibration standards
- Pipeline inspection forms
- Access to pipeline that needs to be inspected and related equipment
- Solvent or mechanical means of removing hydrocarbon residue
- Copies of Quick Quiz
- Module Examinations
- Performance Profile Sheets
- Copies of the Performance Verification for Covered Task 12
MODULE 61111-02 - INTERNAL CORROSION CONTROL (CT 10.1, 10.2, AND 11)

Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Overhead projector and screen
Copies of Performance Verifications for Covered Tasks 10.1, 10.2, and 11
Copies of 49 CFR Part 195 (Liquid) and 49 CFR 192 (Gas)
Whiteboard/chalkboard
Appropriate personal protective equipment
Copies of your company’s policies and procedures manual
Equipment and tools necessary for monitoring and adjusting chemical injection systems
Equipment and tools necessary for inserting and retracting coupon holders
A variety of probes, manufacturers’ instructions, and company forms
Level Two

MODULE 61201-02 - INSTALL CATHODIC PROTECTION SYSTEMS (CT 9.2, 9.3, AND 9.4)

Overhead projector and screen
Transparencies
Felt-tip markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of Performance Verifications for Covered Task 9
Copies of Quick Quiz†
Whiteboard/chalkboard
Appropriate personal protective equipment
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
Copies of your company policy and procedures manual
Magnesium anodes
Knives suitable for cutting magnesium anodes
Ribbon (strip) anodes
Vertical anodes
Horizontal anodes
Header cables
Practice anodes
Lead wires
Junction boxes
Tools to connect anodes
Tools to splice header cables to the anode lead wires
Rectifiers
AC power feed wires
Conduit
Tools to connect the specified conduits to the rectifier
Header cables
Single thermite weld
Tools to separate the cable strands and connect them to a junction box
Manufacturer’s instructions and wiring diagrams
MODULE 61202-02 - MAINTAIN AND REPAIR RECTIFIERS (CT 4)

Overhead projector and screen
Transparencies
Felt-tip markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of Performance Verifications for Covered Task 4
Whiteboard/chalkboard
Appropriate personal protective equipment
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
Copies of your company policy and procedures manual
Rectifying cells
Bridge circuits
Rectifiers
A variety of meters, including the following
  d’Arsonval meters
  Voltmeters
  Ammeters
  Volt-ammeters
  Digital meters
Tools to connect meters to rectifiers
Copies of Figure 1 with the callouts covered
Several ohmmeters
Test leads
Tools to connect leads
Fuses
Rectifier components, including
Meters
AC breakers
AC fuses
Transformers
Stacks
Three-phase circuits
Tools to test three-phase circuits
Tools to adjust the fine tap settings
Electronic control cards
MODULE 61203-02 - MITIGATE INTERFERENCE (CT 1.3 AND 9.1)

Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations*
Performance Profile Sheets
Copies of Performance Verifications for Covered Tasks 1 and 9
Appropriate personal protective equipment
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
Copies of your company policy and procedures manual
Automatic current interrupter
Sample field data sheets
Recording survey notes
Voltmeter
Shunts
Test wires
Test boxes
Tools to attach and terminate test wires
Tools to install shunts inside test boxes
Sample strip maps
MODULE 61204-02 - TEST AND REPAIR SHORTED CASINGS (CT 9.5)

Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of Performance Verifications for Covered Task 9
Appropriate personal protective equipment
Copies of 49 CFR Part 192 (Gas) and/or 49 CFR Part 195 (Liquid)
Copies of your company policy and procedures manual
Calculators
Tools and materials to fill shorted casings, including the following
  - Casings
  - High dielectric materials
  - Casing end seals
  - Vents
Materials to flush the casing annulus
Casing insulators
Center cradles
Tools to install casing insulators and center cradles into a shorted casing
Shorted casings
Tools and materials to repair shorted casings

MODULE 61205-02 - CONDUCT CLOSE INTERVAL SURVEY (CT 1.2 AND 1.4)

Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of the Performance Verifications for Covered Task 1
Appropriate personal protective equipment
Copies of your local code
Wire reels
Current interrupter
Materials and equipment for selecting and maintaining survey test equipment, including manufacturer’s operation manual
Materials and equipment for performing a close interval survey
Materials and equipment for inspecting and testing bonds and protective devices, including manufacturer’s guidelines
Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of the Performance Verifications for Covered Task 7
Appropriate personal protective equipment
Copies of your company’s policies and procedures manual
Sling-type and battery-operated psychrometers, water, and a psychrometric chart
Electronic thermometer/hygrometer and manufacturer’s calibration instructions
Electronic and surface temperature thermometers
Wind meter
Materials for checking a compressed air supply
Copy of SSPC-SP1 and SSPC-SP13
Equipment and materials for measuring surface profile
Equipment and materials for measuring coating viscosity, including Zahn cup
Testing equipment for wet-film and destructive and nondestructive dry-film testing
Coated materials
Pencils of varying hardnesses
Coated section of pipe
Manufacturer’s data sheets and application bulletins
Blank or completed forms for quality control/assurance
Examples of coating failures
Necessary equipment for diagnosing coating failure, including manufacturer’s data sheet/application bulletins
MODULE 61207-02 - PERFORM HIGH-PRESSURE BLASTING/SURFACE PREPARATION (CT 7.4 AND 13.3)

Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of the Performance Verifications for Covered Tasks 7 and 13
Appropriate personal protective equipment
Copies of your company’s policies and procedures manual
Whip checks, hoses, couplings, and coupling gaskets
Photo or drawing of a National Board label on a pressurized tank blast machine
Samples of these types of abrasives: metallic, mineral, by-product, and special-purpose
Copies of SSPC-VIS 1 photographs
Profile comparator, profile gauge, and replica tape
Materials and equipment necessary for blast system start-up, operation, and shutdown, including manufacturer’s operation and instruction manual

MODULE 61208-02 - APPLY COATINGS USING SPRAY APPLICATIONS (CT 7.6 AND 13.5)

Overhead projector and screen
Whiteboard/chalkboard
Transparencies
Markers/chalk
Blank acetate sheets
Transparency pens
Pencils and scratch paper
Module Examinations
Performance Profile Sheets
Copies of Quick Quiz
Copies of the Performance Verifications for Covered Tasks 7 and 13
Appropriate personal protective equipment
Copies of your company’s policies and procedures manual
Sample manufacturer’s coating system data sheets
Respirator
Necessary equipment and materials for spraying
Necessary equipment and materials for cleaning and maintaining conventional spray equipment
Necessary equipment and materials for using, cleaning, and maintaining HVLP spray equipment
Samples of various types of spray coating problems
Viscosity cup and coating material
Wet-film thickness gauge, dry-film thickness gauge, and coated substrates
# Level One

## MODULE 66101-02 – INTRODUCTION TO THE PIPELINE INDUSTRY

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
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</thead>
<tbody>
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This is a knowledge-based module; there is no performance testing.

## MODULE 66102-02 – LIQUID PIPELINE GENERAL ABNORMAL OPERATING CONDITIONS

<table>
<thead>
<tr>
<th>Task Number</th>
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## MODULE 61103-02 – LOCATING PIPELINE AND CABLE (CT 14.1 AND 17.1)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
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</thead>
<tbody>
<tr>
<td>61103-1</td>
<td>Locate line (CT 14.1 and 17.1).</td>
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</tr>
</tbody>
</table>

## MODULE 61104-02 – MEASURE PIT DEPTH AND WALL THICKNESS (CT 8.1, 8.2, AND 8.3)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61104-1</td>
<td>Accurately measure pit depth using a pit gauge (CT 8.1).</td>
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</tr>
<tr>
<td>61104-2</td>
<td>Properly measure a corroded area of pipe (CT 8.3).</td>
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<tr>
<td>61104-3</td>
<td>Using a handheld ultrasonic meter, accurately measure wall thickness (CT 8.2).</td>
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</tr>
</tbody>
</table>
**MODULE 61105-02 – INSPECT BURIED AND SUBMERGED PIPE WHEN EXPOSED (CT 5.1, 5.2, AND 5.3)**

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61105-1</td>
<td>Inspect for physical damage on buried or submerged pipe (CT 5.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61105-2</td>
<td>Inspect for external corrosion on buried or submerged pipe (CT 5.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61105-3</td>
<td>Inspect the condition of external coating on buried or submerged pipe (CT 5.3).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MODULE 61106-02 – ABOVEGROUND PIPE COATING AND INSPECTION (CT 7.1, 7.2, 7.3, 7.5, 13.1, AND 13.2)**

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61106-1</td>
<td>Prepare a coating evaluation and prepare the surface of a pipeline system for coating application or repairs (CT 7.1, 7.2, 7.3, 7.5, 13.1, and 13.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61106-2</td>
<td>Visually inspect and verify the quality of the surface preparation by checking the surface profile (CT 7.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61106-3</td>
<td>Properly apply corrosion-preventative coating to a pipeline facility exposed to atmospheric conditions (CT 7.5).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MODULE 61107-02 – APPLY/REPAIR EXTERNAL COATINGS ON BURIED/SUBMERGED PIPE (CT 13.4)**

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
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</thead>
<tbody>
<tr>
<td>61107-1</td>
<td>Properly prepare and apply different types of coatings according to the manufacturer’s instructions (CT 13.4).</td>
<td></td>
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</tr>
</tbody>
</table>
# Module 61108-02 - Cathodic Protection Measurement (CT 1.1, 1.5, 3.1, and 3.2)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61108-1</td>
<td>Properly locate the reference electrode relative to the structure (CT 1.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61108-2</td>
<td>Measure structure-to-soil potential (CT 1.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61108-3</td>
<td>Obtain a voltage and current output reading from a rectifier (CT 3.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61108-4</td>
<td>Check for proper operation of a rectifier (CT 3.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Determine voltage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Determine current.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Obtain the shunt ratio.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Examine rectifier for abnormal defects.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61108-5</td>
<td>Inspect and test isolation devices (CT 1.5).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Module 61109-02 - Test Station Repair (CT 2.1, 2.2, 2.3, and 2.4)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
</tr>
</thead>
<tbody>
<tr>
<td>61109-1</td>
<td>Install test leads by exothermic welding methods (CT 2.4).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61109-2</td>
<td>Install test leads by non-exothermic welding methods (CT 2.3).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61109-3</td>
<td>Inspect and verify test lead continuity (CT 2.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61109-4</td>
<td>Repair damaged test leads (CT 2.2).</td>
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<td></td>
</tr>
</tbody>
</table>

# Module 61110-02 - Inspect Internal Pipe Surfaces (CT 12)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
</tr>
</thead>
<tbody>
<tr>
<td>61110-1</td>
<td>Inspect internal pipe surface (CT 12).</td>
<td></td>
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</tbody>
</table>

# Module 61111-02 - Internal Corrosion Control (CT 10.1, 10.2, and 11)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61111-1</td>
<td>Insert and remove coupons according to manufacturer and company specifications (CT 10.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61111-2</td>
<td>Properly monitor on-line probes (CT 10.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61111-3</td>
<td>Perform internal corrosion remediation (CT 11).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Module 61201-02 – Install Cathodic Protection Systems (CT 9.2, 9.3, and 9.4)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
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</tr>
</thead>
</table>
| 61201-1     | Correctly install galvanic anodes (CT 9.2, 9.4).  
  • Install anode.  
  • Attach leads to structure and test station. |         |             |
| 61201-2     | Install impressed current ground beds (CT 9.4).  |         |             |
| 61201-3     | Properly install rectifiers (CT 9.3).  
  • Connect positive cable and negative header cables to proper output terminals. |         |             |

# Module 61202-02 – Maintain and Repair Rectifiers (CT 4)

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Item</th>
<th>Date(s)</th>
<th>Recorded By</th>
</tr>
</thead>
<tbody>
<tr>
<td>61202-1</td>
<td>Troubleshoot rectifier bond connections (CT 4.1).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61202-2</td>
<td>Properly repair and replace defective rectifier components (CT 4.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61202-3</td>
<td>Correctly adjust rectifier components for proper output (CT 4.3).</td>
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</tbody>
</table>

# Module 61203-02 – Mitigate Interference (CT 1.3 and 9.1)

<table>
<thead>
<tr>
<th>Task Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61203-1</td>
<td>Take structure-to-soil readings (CT 1.3).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61203-2</td>
<td>Initiate proper remediation for readings that are outside of the desired range (CT 1.3).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61203-3</td>
<td>Install bonds to mitigate DC interference (CT 9.1).</td>
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</tbody>
</table>

# Module 61204-02 – Test and Repair Shorted Casings (CT 9.5)

<table>
<thead>
<tr>
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<th>Date(s)</th>
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</thead>
<tbody>
<tr>
<td>61204-1</td>
<td>Identify and properly repair shorted casings (CT 9.5).</td>
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</table>
## MODULE 61205-02 – CONDUCT CLOSE INTERVAL SURVEY (CT 1.2 AND 1.4)

<table>
<thead>
<tr>
<th>Task Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>61205-1</td>
<td>Select the proper instrumentation, test leads, and reference electrode for a given close interval survey (CT 1.2).</td>
<td></td>
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</tr>
<tr>
<td>61205-2</td>
<td>Correctly perform a close interval survey (CT 1.2).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61205-3</td>
<td>Visually inspect and perform electrical tests on bonds connecting multiple structures and isolating devices (CT 1.4).</td>
<td></td>
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</tbody>
</table>

## MODULE 61206-02 – PERFORMING COATING INSPECTION (CT 7.7)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>61206-1</td>
<td>Properly conduct pre-inspection activities.</td>
<td></td>
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</tr>
<tr>
<td>61206-2</td>
<td>Correctly conduct and record results from inspections performed using various inspection methods (CT 7.7).</td>
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</tr>
</tbody>
</table>

## MODULE 61207-02 – PERFORM HIGH-PRESSURE BLASTING/SURFACE PREPARATION (CT 7.4 AND 13.3)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>61207-1</td>
<td>Prepare the surface in accordance with appropriate specifications and guidelines (CT 7.4 and 13.3).</td>
<td></td>
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</tr>
<tr>
<td>61207-2</td>
<td>Operate power-cleaning tools in a safe and effective manner (CT 7.4).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61207-3</td>
<td>Visually inspect or repair defects (CT 13.3).</td>
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</tr>
</tbody>
</table>

## MODULE 61208-02 – APPLY COATINGS USING SPRAY APPLICATIONS (CT 7.6 AND 13.5)

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>61208-1</td>
<td>Identify the correct coating repair method/procedure for a given type of coating (CT 7.6).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61208-2</td>
<td>Properly apply coating to a pipeline facility exposed to atmospheric conditions (CT 7.6 and 13.5).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61208-3</td>
<td>Visually inspect or repair coating defects (CT 13.5).</td>
<td></td>
<td></td>
</tr>
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</table>