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 alligatored 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)
MODULE 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
MODULE 61206-02 - PERFORM COATING INSPECTION (CT 7.7)

- 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 hardinesses
- 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