



Delivering Pipeline Operator Qualification Technical Skills and Safety Training for the Energy Industry

Targeting DOT Training Requirements

Safety training that specifically targets requirements of the Department of Transportation (DOT) Operator Qualification Rule, and sharpens technical skills essential to the energy industry. The DOT Operator Qualification Rule requires pipeline operators to develop and maintain a written qualification program for individuals performing covered tasks on pipeline facilities. The DOT also requires that pipeline operators qualify their work force on covered tasks. The Operator Qualification Rule includes Subpart N in 49 CFR Part 192 and Subpart G in 49 CFR Part 195.

Delivering Complete Training and Documentation

A library of Pipeline Operator Qualification courses are ready to be delivered to your employees via a state-of-the-art learning management system. It allows you to customize curricula, adjust testing parameters, and even tailor courses with site-specific content and photos. All courses are enhanced with professional graphics, animations, and narration, as well as learning activities and test questions to enhance learning.



Pipeline Operator Qualification

001 Operator Qualification Summary is an introduction to the Department of Transportation (DOT) regulations that require Operator Qualification training for natural gas pipeline workers. (15 mins)

002 Introduction to the Natural Gas Industry explains what natural gas is, why it is useful, and what it is used for. A brief description of the path of natural gas from the well to the customer is given along with a list of agencies responsible for pipeline regulations and the responsibilities of each pipeline employee to maintain safety and good environmental practices. (25 mins)

003 Guidelines for Proctoring Tests and Evaluations discusses the importance of and offers recommended guidelines for quality control during operator qualification examinations. This course also states the responsibilities of the mentor, proctor, and evaluator, as well as ways to validate testing using the ExxTend Learning™ system. (10 mins)

004 Documenting a Field Evaluation in ExxTend Learning is a brief “how-to” course for administrators and field evaluators who must credit personnel with completion of a field evaluation, include documentation, and access user history and reports in the ExxTend Learning system. (10 mins)

***0361 Electric Valve Actuators** explains the basic design, design features, operation, and maintenance of electric valve actuators. AOCs associated with electric valve actuators are included. (40 mins)

***0981 Backfilling** discusses the basic requirements for backfilling pipeline evacuations, including inspection, filling standards, soil conditions, environment considerations, and abnormal operating conditions. (20 mins)

100 Prevention of Accidental Ignition & Potential Ignition Sources examines the DOT rules governing accidental ignition sources of natural gas. Other topics include: the fire triangle, common ignition sources for escaping natural gas, buildup and/or discharge of static electricity, hot and cold cutting and welding, and isolation of pipeline segments. (60 mins)

1010 Abnormal Operating Conditions: Recognize and React covers the definition of AOCs, identifying AOCs, operator qualification, identification of covered tasks, recognition and reaction to AOCs, and rating hazards. This course assists in compliance with DOT regulations and references the B31Q standard. (40 mins)

1011 Abnormal Operations and Safety-Related Conditions explains the difference between abnormal operations and abnormal operating conditions, describes safety-related conditions, and explains how to recognize possible causes of abnormal operations including appropriate responsive actions. Reporting requirements for safety-related conditions are also stated. References to DOT standards that apply to abnormal operations and safety-related conditions are listed. (15 mins)

1012 Abnormal Operations explains what abnormal operations are and how to resolve them. (15 mins)

103 Characteristics and Properties of Natural Gas explores the composition, properties and flammable characteristics of natural gas, the history of natural gas use, gas leak and carbon monoxide monitoring, and natural gas safety. (55 mins)

***105 CGIs and Flame Ionization Units** examines categories of combustible gas instruments, characteristics and properties of natural gas, the fire triangle, LELs, UELs, OSHA safe working levels, carbon monoxide hazards and detection, and the use, operation, and inspection of combustible gas indicators and flame ionization units. (60 mins)

***106 OSHA/DOT – Excavation Safety** explains basic excavation safety, excavation requirements, soil classification and testing, causes of cave-ins, excavation protection, and related AOCs. (60 mins)

***107 Pipeline Pigging** explores the reasons for pigging, pig types and use, common pigging techniques, safe launching and receiving practices, and smart pigging techniques. (90 mins)

108 Work Zone Safety covers the types and usage of traffic control devices, the setup of safe work zones, and proper flagging procedure. (20 mins)

***200 Leak Survey & Leak Classification** examines house counts, class locations, use of a “sliding mile,” leak surveys and classification, pipeline patrols, pipeline marker installation, natural gas detection instruments, bar hole testing, natural gas migration patterns, leak survey records, and more. (100 mins)

***201 Population Density Change & Pipeline Patrol** examines surveys for transmission, jurisdictional gathering and distribution facilities; leak surveys and pipeline patrols; pipeline marker installation; house counts; natural gas detection instruments; marking exposed pipe; and more. (75 mins)

205 Pipeline Crossings addresses construction procedures, conditions, and special considerations involving natural gas pipelines at bridges, stream crossings, ravines, levees, highways and railroad crossings. External corrosion, control of buried or submerged pipelines, protective measures to control atmospheric corrosion, and use of electrical surveys, corrosion history reviews, and records of exposed pipe examinations are also discussed. (65 mins)

***206 Leak & Pipeline Failure Investigation** addresses the importance of the control of pipeline leakage and proper steps of leak investigation necessary for the safe operation of any natural gas pipeline system. Applicable regulations, leaks in progress, special leak precautions, leak detection, and leak surveys are also examined. (65 mins)

***207 Investigating Pipeline Failure** explores the control of natural gas pipeline leakage and necessary leak investigation steps. DOT regulations for Continuing Surveillance and Investigation of Failure are also reviewed. (15 mins)

***244 Current Interrupters** defines current interrupters and their basic uses, configurations, features, and installation instructions for close interval surveys. AOCs associated with current interrupters are included. (20 mins)

***3000 Damage Prevention** explains the requirements for locating and marking underground facilities before excavation work can take place. Some of the main topics include the one-call system, locating underground facilities (overview), marking methods, public and contractor education, and AOCs. (35 mins)

***3001 Locating and Marking Buried Pipelines** explains the requirements for locating and marking underground facilities before excavation work may take place. It also discusses split-box locators and common abnormal operating conditions. (30 mins)

***301 Vault Inspection and Confined Space Entry** addresses key regulations about DOT vault maintenance and inspection. Topics include: vault inspection; hazardous atmospheres; vault entry; OSHA requirements for permit-required confined space entry; confined space hazards, entry planning, and pre-entry training; and prevention of accidental ignition. (75 mins)

305 Dehydration of Natural Gas addresses why water is controlled or removed from natural gas and extraction methods utilizing hydrate inhibition, glycol dehydration, and solid desiccants. (45 mins)

306 Dehydration with Triethylene Glycol addresses glycol dehydration fundamentals, process equipment maintenance, startup and shutdown steps, common operating problems, and analysis of the glycol solution. (65 mins)

***400 Valve Actuators** explains the various styles and design features of actuators/operators and how they operate. Proper maintenance techniques and reconditioning of hydraulic actuators/operators are discussed in this course. (45 mins)



***4010 General Valve Maintenance** explains the function of valves in a pipeline system and the importance of visual inspections and maintenance to ensure that they work properly. It also discusses the qualities of a proper lubricant/sealant, how and when they should be used, and the equipment used to apply them. (25 mins)

***4011 Plug Valve Maintenance** explains how a plug valve operates, along with many of the different design features and their purpose. It also discusses proper cleaning, lubricating, and maintenance techniques that are unique to plug valve maintenance. (20 mins)

***4012 Ball Valve Maintenance** explains how a ball valve operates, along with different design features and their purposes. It also discusses proper cleaning, lubricating, and maintenance techniques that are unique to ball valve maintenance. (25 mins)

***4013 Gate Valve Maintenance** explains how a gate valve operates, along with many of the different design features and their purpose. It also discusses proper cleaning, lubricating, and maintenance techniques that are unique to gate valve maintenance. (20 mins)

***4020 Inspecting and Testing Pressure Limiting Devices** explains how a relief valve operates, along with different design features and their purpose. It also discusses the procedure for testing relief valves. (25 mins)

***4021 Inspecting and Testing Regulators** explains how a regulator operates, along with different design features and their purpose. The differences between a pilot-operated and a spring-operated regulator are explained. The procedure for testing regulators is also discussed. (30 mins)

***4022 Inspecting and Testing Control Valves** explains the purpose of control valves in a pipeline system. The different parts that make up a control valve assembly and their functions are discussed. The process for inspecting a control valve is also explained. (15 mins)

***4030 Pressure Testing Steel Pipelines – Gas** explains the requirements for pressure testing steel pipelines. Some topics covered are water handling, pipe design, class locations, MAOP, SMYS, strength testing, test preparation, and the pressure testing procedure. (40 mins)

***4031 Pressure Testing Plastic Pipelines** explains the requirements for pressure testing steel pipelines. Some topics covered are water handling, pipe design, class locations, MAOP, SMYS, strength testing, test preparation, and the pressure testing procedure. (35 mins)

***407 Joining Steel Pipe Other Than by Welding** examines safety and environmental issues associated with joining pipe; determining correct thread length; application of sealing compound and tape; precautions for slip-type fittings; nut and bolt selection; tightening sequence and numbering systems for flange connections; reuse of a threaded fastener; calibration frequency, records, and specifications for torque wrenches; torque wrench maintenance; and Abnormal Operating Conditions encountered when joining pipe. (35 mins)

408 Maintaining and Repairing Pressure Limiting Devices explains the basic steps for maintaining pressure limiting devices, including relief valves, pressure switches, pressure transducers/transmitters, and monitor regulators. (30 mins)

***4090 Pipeline Leak Repair: Grinding, Welding, and Sleeving** explains the various types of pipeline leaks and the methods to repair them. The definitions and procedures for “hot” and “cold” cutting and welding are included. (35 mins)

***4091 Pipeline Repair: Composites** explains the use of composites to repair imperfections and damage on pipelines. (25 mins)

***4095 Pipeline Repair: Sleeving Including Helical Pipe** discusses various methods for pipeline repair with an emphasis on weld-type sleeves. Abnormal Operating Conditions (AOCs) are included. (40 mins)

***410 Cast Iron Joints** discusses the common problems associated with cast iron pipe and explains the methods for cast iron pipe joint repair, including joint clamps and encapsulation. Abnormal operating conditions are also discussed. (15 mins)

***411 Pipeline Purging With Air and Gas** explains the mechanical nature of purging, isolation methods, and the processes of purging with either air or gas. (40 mins)

***4120 Hot Tapping** defines the regulatory requirements for performing a hot tap. Other key topics include methods of locating and identifying the proper line, the considerations involved for hot tapping, and the hot tapping process. (35 mins)

***4121 Line Stopping** defines line stopping and the regulatory requirements for performing a line stop. Other key topics include methods of locating and identifying the proper line, preparation considerations, and the steps of the line stopping process. (50 mins)

414 Abandonment of Facilities is a DOT Operator Qualification course that examines: deactivation and abandonment of steel and plastic pipeline facilities, including mains, services, regulators, meters, and odorizers; and the importance of documenting deactivated and abandoned facilities. (45 mins)

***415 Installation of Anodes** explains the anode theory, the different types of anodes, a general outline for installing anodes, and a procedure for exothermic welding. (25 mins)

416 Pipeline Shutdown and Startup Planning addresses steps to be taken during a planned shutdown, steps for returning a shut-down section to operation and starting up a new line, basic procedures for emergency shutdown, and how to prevent accidental ignition during shutdown and startup. (45 mins)

***501 Cathodic Protection Troubleshooting** addresses types of and conditions for corrosion, corrosion control on pipelines, cathodic protection, galvanic anodes, impressed current and galvanic systems, types of rectifiers and their functions, inspection guidelines, and the efficiency formula. (60 mins)

***502 Cathodic Protection – Rectifiers** examines equipment needed to locate and repair rectifier failures, precautions to be used when troubleshooting rectifiers, common problems in rectifier failures, troubleshooting tips and procedure guidelines, and basic troubleshooting techniques for locating contacts. (60 mins)

***503 Protective Coatings** explains basic corrosion, protective measures, corrosion regulations, surface preparation, and coating application. Abnormal operating conditions (AOCs) that may be encountered and application of protective coatings are included. (45 mins)

***504 Installation of Test Stations** addresses exothermic welding procedures; test station function; test stations used for pipe-to-soil surveys; test station installation methods; cable bonding techniques; soldering methods; and materials, spacing, and location. (50 mins)

505 Cathodic Protection Criteria is a DOT Operator Qualification course that addresses: cathodic protection criteria and piping applications; cathodic protection surveys; and survey data evaluation and reporting. (50 mins)

***506 Electrical Insulator Inspections and Testing Casings** discusses pipeline casings, testing casings, protective insulators, and related AOCs. (40 mins)

***507 Internal Corrosion** explains the requirements and acceptable methods for pipe inspections. The different causes of internal pipe corrosion, monitoring, and corrosion control methods are also described. Industry standards for acceptable gas quality are included. (45 mins)

***508 Interference: AC and DC** discusses foreign interference concepts, cathodic protection, gradient areas, DC transit systems, AC induced current, interference testing, corrective actions, and related AOCs. (45 mins)



***5090 Structure-to-Electrolyte Surveys** discusses structure-to-electrolyte survey equipment, readings, and meters as well as close interval surveys, logging data, and related AOCs. (40 mins)

5091 Basic Corrosion explains basic corrosion, the causes and types of corrosion, bacterial corrosion, and factors such as pH and temperature that affect corrosion rates. (25 mins).

***5093 Close Interval Surveys** discusses the purpose and requirements of a close interval survey, required equipment, steps of a survey, survey impediments and solutions, data loggers, and documentation. AOCs that may occur during a close interval survey are included. (35 mins)

***510 Atmospheric Corrosion – Pipeline Operations** addresses requirements for atmospheric corrosion control, specific DOT regulations pertaining to atmospheric corrosion in pipeline operations, the corrosion process, attributes of and risk factors for atmospheric corrosion, and protective measures for atmosphere corrosion control. (30 mins)

5110 Rigging: Planning and Inspections explains rigging operations planning, weight calculations, rigging equipment, and inspections for rigging equipment. (55 mins)

5111 Safe Rigging Practices explains the proper use of rigging equipment, hoists, and standard hand signals for rigging operations. (35 mins)

***600 Electric Arc Welding** examines types of electric arc welding, types and uses of joints, weld defects and prevention, preheating a weld area, electrode selection and storage, welding sequence, pipe beveling and lineup, arc welding techniques, striking the arc, hot and cold welding and cutting, weld positions, field inspections of welds, and safety precautions during electric arc welding. (95 mins)

***601 Welder Qualification** addresses butt, fillet, and 90-degree branch welds; safety precautions for welders; essential variables; single and multiple qualification tests; macro-section tests and face bend tests on branch and sleeve welds; typical welder qualification tests; and DOT 192 Appendix C. (130 mins)

***602 Weld Repairs and Welding Procedures** examines the functions of a welding inspector; percentages of each day's butt welds to be tested, depending upon class location, when nondestructive testing is required; common welding defects and how to cure them; information needed on welding inspection reports; and essential variables. (60 mins)

***604 Oxygen/Acetylene Welding & Cutting** addresses types of gas welding; identifying joints; equipment needed for oxy/acetylene and gas welding and cutting; neutral, carburizing, and oxidizing flames; purging hoses; field inspection of welds; weld positions; hot and cold welding and cutting; and safety precautions. (90 mins)

***606 NDT: Magnetic Particle Inspection** explains the use of magnetic particle inspection (MPI) to detect cracks and other anomalies in pipe. There is heavy emphasis on the use of this process to detect stress corrosion cracking (SCC). It also explains the preparation methods and processes for performing a wet or dry magnetic particle inspection. Common abnormal operating conditions (AOCs) that may be encountered while inspecting a pipeline are identified, including possible reactions. (35 mins)

***607 NDT: Liquid Dye Penetrant Inspection** examines the liquid dye penetrant inspection process, including weld preparation, application of liquid penetrant cleaner and developer, weld post-cleaning, documentation requirements, and abnormal operating conditions. (35 mins)

608 Pipeline Integrity: High Consequence Area Field Surveys discusses the description of class location units, class locations, DOT requirements, high consequence areas, and abnormal operating conditions that may be encountered while performing class location or high consequence area surveys. (30 mins)

***609 Dresser-Coupled Pipelines** explains how Dresser couplings work, bonding couplings, locating unbonded couplings, types of repairs, repair procedures, and related AOCs. (25 mins)

***610 Ultrasonic Thickness Testing** examines the purpose and applicability of ultrasonic thickness testing. The steps for conducting an ultrasonic thickness test are explained, as are pipe or metal surface preparation, and use of couplant gel. (35 mins)

7000 Compressor Stations: Operations and Safety is a DOT Operator Qualification course that explores procedures and safety precautions of Compressor Station Operation, including: compressor station components; written emergency plan; compressor station systems; emergency shutdown procedures; and electrical hazards. (35 mins)

***7001 Compressor Stations: Design and Emergency Planning** discusses the design and safety features that are required in a compressor station. The safety factors include boundaries, building design, ventilation, flammable materials storage, pressure limiting devices, gas detectors, fire sensors, emergency shutdown systems, and emergency planning. (45 mins)

***701 Reciprocating Compressor Units** addresses operation of an internal combustion-reciprocating compressor, including start-up, loading, unloading and shutdown procedures; parts of a compressor; and compressor troubleshooting and maintenance. (85 mins)

***703 Compressor Operation: Turbine Units** examines the operational process of a turbine compressor unit. This course addresses theory of operation for turbine and centrifugal compressor units; major components of the turbine unit; purposes of fuel gas, lubrication, and air systems; key components of wet and dry seal systems; startup, loading, unloading, and shutdown procedures for turbine compressor units; and maintenance disadvantages. (95 mins)

***704 Compressor Operation: Compressor Cylinders** examines the major components of a compressor cylinder, compressor valve operation and classification of cylinders, troubleshooting and safely changing compressor cylinders, maximizing available horsepower for compressor efficiency, and piston rings and packing materials. (60 mins)

***705 Compressor Operation: Gas Path Integrity** addresses gas path integrity and maintenance to minimize compromises; horizontal and vertical rod runout; critical compressor clearances involved in gas path integrity, including measurement, records, acceptable limits, and adjustment; leak testing methods and repair; run-time verification tests; and proper torquing of threaded fasteners. (70 mins)

***706 Compressor Operation: Power Cylinder Balancing** addresses the importance of balanced engine power cylinders for fuel efficiency, emissions control, and lower repair costs; correct procedures and methods for balancing power cylinders; and how engine performance-monitoring tools are used to balance power cylinders. (45 mins)

***800 Gas Control** examines major gas control terminology, flow rate and pressure, SCADA systems, compressor operation basics, emergency response, and overpressure protection for pipelines carrying high-pressure gas. (60 mins)

900 Fundamentals of Electricity addresses basic properties of electricity, circuits, and safety device components; Ohm's law; measuring voltage, current, and resistance; types of switches and relays; common electrical symbols and their use in wiring and line diagrams; inductance and capacitance; waveform properties and phase relationships; and transformers. (95 mins)

***901 Basic Electronics: PLCs** addresses basic information and hardware components concerning PLCs; principles of PLC operation; applications of PLCs in the natural gas industry; installation, calibration and checkout, documentation, and troubleshooting PLCs; peripheral devices used with PLCs; waveform properties and phase relationships; and ladder logic and other skills associated with programming PLCs. (70 mins)



902 Basic Electronics: SCADA addresses SCADA system: history, office and field hardware components, communication protocols, installation, calibration, and troubleshooting. (105 mins)

1200 Underground Storage of Natural Gas and Liquids addresses underground storage in the energy industry, similarities and differences of gas and liquids products, basic storage functions and terms, different types of underground storage, and the purpose and function of underground storage equipment. (95 mins)

***1312 Aerial Patrol** discusses aerial pipeline patrol and its associated abnormal operating conditions (AOCs). (30 mins)

Distribution

***202 Odorization: Concentration Testing** addresses natural gas odorization and its regulation, distribution systems, class determination, testing, recordkeeping, odorometer operation and maintenance, and safe handling and storage. (70 mins)

***404 Plastic Pipe Fusion** examines types of plastic pipe used in the heat fusion process, principles of heat fusion, the heat fusion process, inspection and testing of fused joints, safety precautions when handling polyethylene pipe, hazards of static electricity, and spark prevention. (100 mins)

***404-SP Plastic Pipe Fusion – Spanish Version** (100 mins)

***405 Electrofusion** examines types of plastic pipe used in the electrofusion process, basic principles of electrofusion, the electrofusion process, inspection and testing of fused joints, safety precautions when handling polyethylene pipe, hazards of static electricity, and spark prevention. (70 mins)

***406 Mechanical Fittings** examines Lycofit® fittings, joining plastic pipe with mechanical fittings, and installation of various kinds of couplings. (65 mins)

413 Up-Rating Pipeline Systems teaches the user how to: determine present system and facilities conditions, review proposed up-rate pressures, understand and write an up-rate plan, determine system conditions prior to pressure increases, and maintain required up-rate records. (65 mins)

***417 Installation of Plastic Mains and Services – Part 1** addresses precautions and practices for handling and storing plastic pipe, installation of plastic pipe for natural gas main and service lines, installation of transition fittings, installation of excess flow valves, abandonment and reinstatement of mains and services, and installation of tracer wire. (45 mins)

***418 Installation of Plastic Mains and Services – Part 2** addresses direct burial of plastic pipe; tie-ins and tapping service punch tees; squeezing plastic pipe, including the squeeze-off procedure; inserting plastic pipe in an existing line; pressure testing mains and services; purging mains; and repairing PVC pipe. (55 mins)

419 Natural Gas Operations and Maintenance Safety examines general safety precautions for natural gas operations and maintenance; testing for gaseous or oxygen-deficient atmosphere; lock-out and tag-out of gas valves; trenching and excavation safety guidelines; hazards of directional boring; traffic management, including traffic control zones; hazards of static electricity, including possible ignition; and the Hazard Decision Tree Analysis. (70 mins)

***420 Installation of Steel Mains and Services** addresses proper handling, storage and inspection of steel pipe; typical right-of-way and easement requirements, including pipeline depth and clearance from other underground structures; pipe installation requirements for overhead and underground highway, railroad, stream, river, and levee crossings; pipeline installation, including joining pipe by welding or with fittings, lowering-in, pressure testing, and backfilling the excavation; and steel Distribution Service line installation, connection to curb valves, and connection to the main tapping. (65 mins)

***421 Pipeline Tie-In Methods** is designed for gas transmission and distribution participants. This course addresses tie-in considerations regarding job planning, safety, equipment, materials and manpower; tie-in procedures, including line shutdown, purging, welding, pressure testing, required fittings, and returning the pipeline to service; tie-in configuration connections; and installation of one-and two-piece control fittings, steel-to-plastic transition fittings, curb and service valve tees, three-way tees, tapping and drilling, and stopping procedures for steel pipe. (35 mins)

***500 Atmospheric Corrosion – Distribution Operations** examines the requirements for atmospheric corrosion control. This course addresses the corrosion process; surface preparation; attributes of and risk factors for atmospheric corrosion; and protective methods used to control atmospheric corrosion. (40 mins)

***1221 Install Meters and Regulators – Residential** examines the basic parts of a residential gas distribution system; installation of meters and regulators; protecting a residential gas system from pressure damage; meter and regulator selection; installation of a meter set and adjusting a meter's set point; testing for gas system leaks; and service wrap-up procedures. (50 mins)

***1231 Install Meters and Regulator – Commercial** addresses the basic parts of a commercial gas distribution system; installation of meters and regulators; protecting a commercial gas system from pressure damage; meter and regulator selection; installation of a meter set and adjusting a meter's set point; testing for gas system leaks; and service wrap-up procedures. (60 mins)

Liquid Pipeline

LQ100 LQ: Subpart H – Corrosion Control examines Corrosion Control regulations and other CFR Title 49 Part 195 provisions. Other topics include: pipeline patrols; population changes and encroachments; underwater inspection and reburial of pipelines in the Gulf of Mexico; and inspection of exposed pipelines, right-of-way markers, in-service breakout tanks, and rectifiers. (30 mins)

***LQ201 LQ: Pipeline Patrol** explains the methods of pipeline patrols, required inspections, and inspection intervals. Visual inspections include adequate pipeline cover, line markers and signs, exposed sections of pipelines, corrosion, crossings, changes in population, breakout tanks, and leak surveys. Electrical inspections include rectifiers and electrical insulators. Right-of-way maintenance is also discussed. (50 mins)

***LQ202 LQ: Pressure Testing Steel Pipelines** explains the requirements for pressure testing steel pipelines. Some topics covered are water handling, pipe design, establishing MOP, pressure testing requirements, test preparation, and the pressure testing procedure. (35 mins)

***LQ300 LQ: Marking Pipelines – Temporary and Permanent** addresses key regulations for pipeline safety and corrosion control, including: excavation backfilling for liquid pipelines; location, installation, and maintenance of permanent pipeline marker signs; corrosion inspection for uncovered pipelines; continuing education; written damage prevention programs; one-call systems; responsibility for facility locations; temporary pipeline marking; symbols; qualifications to perform pipeline location and marking; excavation near pressurized pipelines; safety buffer zones; and abnormal operating conditions. (65 mins)

***LQ400 LQ: Below Ground Pipe Coatings & Exposed Pipe** addresses below-ground pipeline coating for hazardous liquid pipelines, remedial actions when exposed pipeline is located, pipe coating removal, pipeline operator responsibilities, marking exposed pipeline, pipe surface preparation, coating material preparation and application, jeeeping, and abnormal operation conditions. (85 mins)



***LQ415 LQ: Installation of Anodes** addresses cathodic protection and test lead installation on liquid pipeline systems, terms associated with galvanic anode installation, the galvanic anode theory, types of anodes and their uses, calculations for sacrificial anode output and expected life, anode installation, cable bonding and exothermic welding techniques, and abnormal operating conditions. (50 mins)

***LQ416 LQ: Conduct Annual Surveys** examines pipeline safety regulations with regard to: testing frequency of cathodically protected pipelines, including bonds, and buried or submerged pipelines, measurement of tank bottom-to-soil potentials, handling abnormal operating conditions during annual surveys, measurement of pipe-to-soil, tank bottom-to-soil, and casing-to-soil potentials and the electrical criteria used to determine adequate protection, electrode (half-cell) maintenance: placement of an electrode (half-cell) and use of multi-meter while taking potentials reading, foreign electrical interference, and foreign line interference testing. (110 mins)

***LQ501 LQ: Cathodic Protection Troubleshooting** examines cathodic protection rectifiers, including: instruments used to troubleshoot rectifiers and cathodic protection systems, troubleshooting precautions and procedures, abnormal operating conditions, common operational problems, rectifier repair techniques, and basic troubleshooting techniques used when locating contacts. (70 mins)

***LQ502 LQ: Rectifier Inspections** examines conditions for corrosion cell function, types of pipeline corrosion cells, requirements for liquid pipeline systems, controlling corrosion on pipelines and above ground storage tanks, cathodic protection testing, installation of test leads, cathodic protection rectifier inspections, and recognizing and reacting to abnormal operating conditions. (80 mins)

***LQ504 LQ: Installation of Test Stations** addresses terms associated with exothermic welding procedures; test stations and cathodic protection regulations; test stations used for pipe-to-soil surveys; test station installation methods; performing pull tests; test station materials, spacing, and location; and recognizing and reacting to abnormal operating conditions. (50 mins)

***LQ508 LQ: Interference (A/C and D/C)** teaches operating personnel about: foreign interference; static, dynamic, and AC-induced stray currents; calculating circuit resistance of a bond; and eliminating stray current interference. (60 mins)

***LQ707 LQ: Introduction to Compressor and Pump Operations** explores the purpose, types, and basic functions of natural gas compressors and pipeline pumps; starting and stopping procedures for a products pump; the functions of the devices used to prevent pipeline overpressure, including relief valves, monitor regulators, regulators, pressure switches, and pressure transmitters. (85 mins)

***LQ800 LQ: Pipeline System Control** explores the basic definitions of a liquid pipeline system, duties and responsibilities of a pipeline controller, types of pipeline control and their regulations, calculations on safe and timely product delivery, SCADA and SCADA monitoring systems, and procedure and follow-up actions for emergency response. (65 mins)

***LQ901 LQ: Programmable Logic Controllers** addresses the type of equipment the PLC replaces and the PLC application; functions of PLC hardware components; PLC modes of operation; PLC memory function; PLC installation in various environments; calibration and check-out of analog loops in a PLC, including zero and span adjustments; proper operation of discrete I/O in a PLC; documenting PLC calibration and check-out; basic troubleshooting: PLC ladder logic concepts and changes; PLC timers and counters, including function and on-site changes; adjusting PLC pressure set points on-site; implementing PLC programs on-site; documenting PLC program changes; and regulatory requirements for the use of PLC's in the pipeline industry. (125 mins)

***LQ902 LQ: Pressure Switches** examines the functions of a pressure switch; absolute and gauge pressure; primary and secondary calibration standards; pressure switch inspection, operational testing, and calibration; federal regulations; and abnormal operating conditions. (50 mins)

***LQ903 LQ: Pressure Transmitters** examines pressure transmitter functions; absolute and gauge pressure; primary and secondary calibration standards; pressure transmitter inspection, operational testing, and calibration; documenting calibration results; applicable federal regulations; and abnormal operating conditions. (60 mins)

***LQ0271 LQ: Meter Maintenance and Proving** discusses meter proving, maintenance, and methods used in leak detection. AOCs relevant to meter proving are included. (35 mins)

***LQ0293 LQ: Flushing and Purging Pipeline Systems** explains general guidelines for flushing and purging pipeline systems using several methods, including low-point drains and pig displacement. Safety precautions and abnormal operating conditions (AOCs) for flushing and purging are also discussed. (40 mins)

***LQ0401 LQ: Inspecting and Testing Control Valves** explains the operation and design of control valves, the process for inspecting a control valve, and abnormal operating conditions that may be encountered during inspection and testing. (25 mins)

LQ1012 LQ: Abnormal Operations explains abnormal operations for liquids pipelines and how they should be resolved. (15 mins)

***LQ1100 LQ: Cathodic Protection – Aboveground Storage Tanks** addresses conditions for corrosion cell function; corrosion on metal structures; anodic and cathodic area functions and roles in protecting against metal loss on aboveground steel storage tanks; stray (interference) currents and direct current (DC); general and pitting corrosion; types of corrosion cells on steel storage tanks; galvanic (sacrificial) anodes and impressed current systems; external corrosion control testing intervals for cathodic protection systems and breakout tank inspections; insulated (electrical isolation) joints and protective coatings; anode operation and installation; measuring tank bottom-to-soil potential readings while considering the IR drop and at the center of the tank bottom; and abnormal operating conditions pertaining to rectifier inspections. (70 mins)

***LQ1102 LQ: Inspection – Aboveground Storage Tanks** addresses tank shell inspections in accordance with API-575 Inspection of Atmospheric and Low-Pressure Storage Tanks; corrosion cell function; how corrosion occurs where electrical current leaves or flows from a metal structure; anodic and cathodic area functions and roles in protecting against metal loss on aboveground steel storage tanks; stray (interference) currents and direct current (DC); general and pitting corrosion; types of corrosion cells on steel storage tanks; applying cathodic protection; galvanic (sacrificial) anodes and impressed current systems; external corrosion control testing intervals for cathodic protection systems and breakout tank inspections; and abnormal operating conditions pertaining to rectifier inspections. (60 mins)

***LQ1641 LQ: Pigging: Launching and Receiving** introduces pipeline pigging and pigging safety. This course also explores operational considerations when pigging, launching and receiving a pig, and abnormal operating conditions associated with pigging. (55 mins)

***LQ2350 LQ: Aboveground Storage Tank Overfill Protection** addresses the aboveground storage tank overfill protection program outlined by API 2350 and the NFPA 30 recommended practices, overfill protection requirements. It also covers state regulatory agency impact, Class I liquids, overfill protection written procedures, product transfer written procedures, tank alarm levels and equipment for attended and unattended tank facilities, and abnormal operating conditions. (70 mins)



DOT Compliance

850 Public Awareness addresses public awareness program requirements for the natural gas and hazardous liquids pipeline industries, including types of stakeholder audiences, message content, message delivery frequency, and program evaluation. (35 mins)

851 DOT Drug Awareness addresses workplace substance abuse, DOT-regulated drug abuse policies, job performance, crisis situations, drug testing requirements, and the roles and responsibilities of supervisors. (75 mins)

852 DOT Alcohol Awareness addresses workplace substance abuse, DOT-regulated alcohol abuse policies, job performance, crisis situations, alcohol testing requirements, and the roles and responsibilities of supervisors. (60 mins)

853 Contractor Safety examines basic safety principles for natural gas and hazardous liquids pipeline workers. Course topics include guidelines, emergency procedures, communication, recordkeeping, and equipment and operations. (20 mins)

854 Accident/Incident Investigation Overview discusses the general steps necessary to conduct an investigation of an accident or incident involving natural gas and hazardous liquids pipeline systems. (30 mins)

858 System Control: Fatigue Management for Supervisors examines how control room supervisors can recognize and manage fatigue on the part of controllers who work with SCADA systems for natural gas and hazardous liquids pipeline operators. The fatigue mitigation strategies in this course are also useful for supervisors of shift workers at compressor and pump stations and other workers involved in around-the-clock operations such as pigging, hydrotesting and dewatering, pipeline tie-ins, and new pipeline and station construction. (30 mins)

859 System Control: Fatigue Management for Controllers examines fatigue countermeasures that natural gas hazardous liquids pipeline controllers and other shift workers can take to prevent fatigue. Strategies that these workers can take both at home and at work are discussed. (30 mins)

860 System Control: Control Room Management Regulations is an overview of the control room management provisions of 49 CFR 192, "Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards," and 49 CFR 195, "Transportation of Hazardous Liquids By Pipeline." Major provisions of the CRM amendment are addressed, including written CRM procedures, roles and responsibilities, adequate information, point-to-point verification, fatigue, alarm, and change management, operator experience, training, and compliance validation and deviation. (30 mins)

Emergency Response & Planning

102 Emergency Plans & Public/Contractor Education addresses emergency action plans and reviews damage prevention programs including one-call systems, public and contractor education about gas pipelines, and response procedures for pipeline damage from an outside force. (100 mins)

ER1300 Facility Response for Hazardous Liquids Pipelines is an overview course about the type of facility response plan utilized in the hazardous liquids pipeline industry. (25 mins)

ER1301 Emergency Response Plan for Natural Gas Pipelines explores the components of respective emergency response plans utilized by the natural gas and liquefied natural gas pipeline industries. (25 mins)

ER1302 Working with the Media During an Emergency addresses appropriate interview protocols with the news media and emergency response officials at the scene of a pipeline emergency. (35 mins)

ER1304 Pandemic Preparedness: What Every Employee Should Know

describes how pipeline employees and their workplaces can prepare for a pandemic, including how to protect themselves and adjust working arrangements to deal with a reduced workforce. (30 mins)

ER1305 Pipeline Security Planning discusses the development of a pipeline security plan using the references and guidelines set forth by governmental agencies. It also covers roles and responsibilities of employees, types of security threats and incidents, reporting, facility assessments, security measures, and plan implementation. (50 mins)

ER1306 Corporate Emergency Management Plan explains how planning will help management provide key corporate resources to assist operational assets responding to an emergency. (20 mins)

ER1308 SPCC Plans for Non-Production/Bulk Storage Facilities examines the general regulatory requirements of an SPCC Plan as well as specific regulatory requirements for non-production onshore facilities. (35 mins)

ER1309 SPCC Plans for Onshore Production Facilities examines the general regulatory requirements of an SPCC Plan as well as specific regulatory requirements for onshore oil production facilities and onshore drilling and workover facilities. (35 mins)

Environmental

855 Introduction to Waste Management and Minimization provides general information about the management of solid waste, specifically hazardous waste as defined in RCRA Subtitle C, and an overview of the waste minimization hierarchy. (50 mins)

856 Air Permitting for Supervisors is a general overview course that discusses the purpose of air permitting, federal and state operating permits, stack and fugitive emissions, emissions issues, agency inspections, inspection preparation, and responding to Notices of Violation. (25 mins)

8561 Air Permitting Awareness is a general overview course that examines the purpose of air permitting, Title V operating permits, stack and fugitive emissions, emissions issues, agency inspections, inspection preparation, and responding to a citation. (20 mins)

857 Environmental Awareness is designed to make all employees aware of the types of environmental concerns, including regulatory requirements that pipeline operators must address. (30 mins)

Instrument Use & Care

***903 Using the DTEX Odorant Detection Instrument** teaches the learner about the DTEX DX1000G/L odorant detection instrument system and how to conduct an odor concentration test. (30 mins)

***904 Using the Health ODORATOR®** explores how this odorant detection instrument works, explains how to operate and troubleshoot the instrument, and provides additional information that will help the user skillfully operate the instrument. (15 mins)

905 Using the Health Gasurveyor® 3-500 examines the components, range of operation, and key functions of this combustible gas indicator, and also explains how to operate the instrument. (30 mins)

906 Using the T82 Single Gas Monitor introduces operators to the T82 Single Gas Monitor and teaches how to operate this sensitive instrument. Calibration, maintenance, and smart sensor modes are also addressed. (20 mins)



***907 Using the Radiodetection Pipe Locator** teaches techniques for locating buried pipeline and cables using the Radiodetection Pipe Locator. The course also explains how to operate the Radiodetection receiver and transmitter. Tips for using the Radiodetection locator are also provided. (75 mins)

***908 Using the Metrotech Pipe Locator** explains how to use this pipe locating instrument, including the three primary locating methods: direct connection, inductive coupling, and the inductive method. Also examined are instrument checkout procedures, tracing techniques, and maintenance requirements. (60 mins)

***909 Ditch Witch® Pipe Locators** discusses the control features and functions of the Ditch Witch® Pipe Locator receiver and transmitter, the specific operation and line locating methods, and the abnormal operating conditions that may be encountered while performing a line location. (40 mins)

910 Using a Digital Multimeter is an introduction to the metric system, the concepts of electricity, and how to use a multimeter to measure resistance, voltage, and amperage. (45 mins)

Human Resources

HR1000 Human Performance Systems addresses trends and economic forces driving change in the pipeline industry; competence, performance, and productivity; the human performance model; the human performance system; and human performance improvement. (40 mins)

HR1001 The Mentoring Process examines: mentoring and counseling basics; an effective mentoring system; mentor roles and responsibilities, ethical behavior, rapport building, communication techniques, and conflict resolution. (65 mins)

HR1002 Job Performance Evaluations examines differences between mentoring and job performance evaluations; the evaluator's role; employee evaluation plan; competency profiles; assessing knowledge, skills, attributes, and common barriers to accurate observation; teaching job task knowledge and job skills; and giving and receiving feedback. (35 mins)

HR1003 Effective Media Relations addresses how to participate in a media interview at the scene of an emergency; the five "Ws" and the "nine points"; what emergency response officials and the news media should know during a company emergency; providing the media with proper contact information; spokesperson's role during pipeline emergencies, including compliance with DOT regulation Title 49 CFR 192.615; and use of pipeline maps and drawings. (35 mins)

HR1004 Incident Command System and Natural Gas Emergencies addresses the Incident Command System (ICS) and Natural Gas Emergencies training program, Incident Commander responsibilities and staff, kinds of pipeline emergencies and company response, implementing a successful ICS, the role of NIMS in incident management, and maintaining relations with emergency response officials. (35 mins)

HR1005 Ethics and Compliance examines ethics and compliance as they apply to a Code of Conduct and company policy for all employees of a pipeline company, including senior management and the board of directors. (50 mins)

HR1006 Management of Change examines the concept of management of change (MOC), the types of changes, the application and importance of an MOC program, and the importance of understanding MOC processes used within a specific organization. (35 mins)

HR1007 Right-of-Way Agent Training: Landowner Communications examines best practices for communicating with landowners whose properties may be affected by pipeline construction. (30 mins)