

ISTC Code	Operator Qualification Course
090QIGN	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)
090QAOC	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)
090QSAFE	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)
090QAO	1012 Abnormal Operations explains what abnormal operations are and how to resolve them. (15 mins)
090QGAS	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)
090QCGI	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)
090QEXCV	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)
090QPIG	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)
090QLEAK	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)
090QPLPT	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)
090QODOR	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)
090QDIV	204 Diversity in the Workplace discusses diversity in the workplace, its effects and benefits, and how to create and manage a diverse workplace.
09205SUB	205 Creating an Alcohol- and Drug-Free Workplace is focused on supervisors and management, and explains the benefits of an alcohol/ drug-free workplace, recognizing and confronting drug abuse, creating a drug-free program, and the process of intervention, rehabilitation, and disciplinary action.
090QPCRS	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)

090QPFAIL	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)
090QPINV	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)
09208ANGER	208 Anger Management: Managing Your Anger explains the anger response and how to control it.
09211COACH	211 Coaching and Counseling defines the role of a coach in the workplace and lists the advantages of using a coach for both employees and the company. In addition, this course explains good counseling techniques and lists characteristics of a good coach-employee relationship.
09213DRIV	213 Safe Driving Skills reinforces basic driving skills and safety tips.
09217ETHIC	217 Sarbanes-Oxley Act: Ethics Awareness addresses the Sarbanes-Oxley Act by discussing ethics, the importance of ethical conduct in the workplace, types of unethical behavior, and how to both recognize and avoid unethical practices.
090QDAMP	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)
090QLOC	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)
09352ARIL	352 Aerial Lifts is designed to explain the hazards of aerial lifts, and teach the learner about proper inspection and operation of aerial lifts.
09354FKB	354 Forklift Operation and Safety discusses the features and safety factors that are intrinsic to the design, load handling, and operation of forklifts.
090QVOPR	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)
090QGENV	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)
090QGATE	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)
090QBALL	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)
090QPLUG	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)
090QREG	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)
090QCONT	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)

090QPLD	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)
090QPRES	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)
090QPLAS	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)
090QPPFS	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)
090QELFS	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)
090QMECH	406 Mechanical Fittings examines Lycopfit® fittings, joining plastic pipe with mechanical fittings, and installation of various kinds of couplings. (65 mins)
090QJOIN	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)
090QGWS	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)
090QPRCOM	4091 Pipeline Repair: Composites explains the use of composites to repair imperfections and damage on pipelines. (25 mins)
090QPURG	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)
090QHTAP	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)
090QSTOP	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)
090QUPRAT	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)
090QABAN	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)
090QANOD	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)
090QSHUT	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)

090QPLS1	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)
090QPLS2	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)
090QSAFT	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)
090QSTLM	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)
090QATMC	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)
090QRECT	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)
090QCOAT	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)
090QRIT	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)
090QINSUL	506 Electrical Insulator Inspections and Testing Casings discusses pipeline casings, testing casings, protective insulators, and related AOCs. (40 mins)
090QINTC	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)
090QACDC	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)
090QSTES	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)
09525DRIV	525 Safe Driving Practices explores common traffic law violation; driving and road hazards; and safe vs. dangerous driving practices. (30 minutes)
090QWELD	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)

090QWQUL	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)
090QWRPR	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)
090QOAWL	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)
090QCOMP	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)
090QRCIP	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)
090QCCYL	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)
090QGSPi	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)
090QENBL	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)
09749SEC	749 Port Facility Security Awareness addresses the need for port facility security and the basic security requirements mandated by the MTSA. The course explains the intent of the MTSA; outlines a port's Facility Security Plan; and discusses potential security problems; certain dangerous cargo; and the importance of hazardous materials recognition.
09751THRE	751 Threats to Maritime Security explains the importance of recognizing threats from piracy, armed robbery, and terrorism; the effects of these threats; and ways to prevent or minimize these threats.
09754MSAF	754 MTSA for Facilities explains general requirements of the Maritime Security Transportation Act for facilities; responsibilities and qualifications of entities involved in maintaining a compliant facility security program; and security assessments and plans used to organize facility security.
09755MTSA	755 MTSA for Certain Dangerous Cargo (CDC) examines dangerous cargo pertaining to port facilities and vessels; recognition of a CDC facility or vessel; CDCrequired special security measures; and how CDC regulations are interrelated.
09758SPi	758 Ship/Port Interface Security explains when to use a Declaration of Security (DoS), what is included in its contents, who can complete one; and the reporting requirements of vessels prior to entering port, including MARSEC level compliance, Notice of Arrival, and Notice of Departure.

09759MAR	759 Maritime Security Levels (MARSEC) defines MARSEC levels; compares MARSEC and DHS security levels; and describes what actions are required when the MARSEC level changes.
0970FSACT	760 Port Facility Security Actions illustrates the identity and meaning of each MARSEC level; actions required by port facilities; security procedures; and additional security actions for certain types of facilities.
09760FSPD	765 Port Facility Security Plan Development and Approval covers the required content of an FSP and explains how it should be handled; the FSP approval process; and possible temporary security measures that may apply to an FSP.
09774DET	774 Weapons and Dangerous Substances provides facility security personnel with information about weapons and dangerous substances as well as methods for detecting them.
09777RECO	777 Recognizing Persons Posing Risks addresses security risk observation techniques; general characteristics and behavioral patterns of persons who are likely to threaten security; and appropriate ways to respond to a person who may pose a security risk.
09778CIRC	778 Circumventing Security Measures explores methods used by criminals and terrorists to circumvent security measures; signs of terrorist activities; and techniques to thwart terrorist activities.
09782DRUG	782 Drug and Alcohol Awareness for Supervisors addresses the benefits of a drug-free workplace and program; the role of a supervisor; recognizing substance abuse; associated regulations; job factors; confronting employees; and help resources for employees.
090QGCNT	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)
09833LADRS	833 Ladder Safety explains the different types of ladders, their features and associated hazards, and safety procedures and precautions.
090QELCF	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)
090QPLCS	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)
090QSCDA	902 Basic Electronics: SCADA addresses SCADA system: history, office and field hardware components, communication protocols, installation, calibration, and troubleshooting. (105 mins)
090QHRJE	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)
090QLQST	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)

<p>09OQLQPP</p>	<p>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)</p>
<p>09OQLQMP</p>	<p>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)</p>
<p>09OQLQBP</p>	<p>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)</p>
<p>09OQLQAS</p>	<p>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)</p>
<p>09OQCTHP</p>	<p>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)</p>
<p>09OQITST</p>	<p>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)</p>
<p>09OQLQSC</p>	<p>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)</p>