

Course No. 1153

Industrial Electrical Safety Training Course

ELECTRICAL ENGINEERING
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Industrial Electrical Safety Training Course is a comprehensive professional development program designed to equip engineers, maintenance professionals, supervisors, technicians, operations personnel, and HSE specialists with the knowledge and practical skills required to identify, assess, control, and manage electrical hazards in industrial environments. Electrical safety is a fundamental component of operational excellence, helping organizations protect personnel, safeguard critical assets, maintain business continuity, and comply with national and international safety regulations.

Industrial facilities operate complex electrical systems that include power distribution networks, switchgear, transformers, electric motors, control panels, substations, generators, and automation systems. Improper work practices, inadequate hazard assessment, poor maintenance, or failure to follow electrical safety procedures can result in arc flash incidents, electric shock, equipment damage, production interruptions, and significant operational risks. This course provides participants with internationally recognized electrical safety principles and industry best practices for creating and maintaining safe electrical working environments.

Throughout the program, participants will develop a comprehensive understanding of electrical hazards, electrical risk assessment, shock protection, arc flash hazards, lockout/tagout (LOTO), isolation procedures, permit-to-work systems, electrical personal protective equipment (PPE), grounding and bonding, safe switching operations, inspection and testing requirements, electrical safety management systems, emergency response procedures, incident investigation, and regulatory compliance. Practical exercises and real industrial case studies enable participants to apply safety principles effectively in real workplace situations while strengthening hazard recognition and decision-making skills.

The Industrial Electrical Safety Training Course also demonstrates how electrical safety integrates with maintenance management, operational excellence, asset reliability, engineering safety, business continuity, regulatory compliance, risk management, and organizational safety culture. By completing this course, participants will be prepared to reduce electrical incidents, strengthen workplace safety, improve compliance, protect critical infrastructure, enhance operational reliability, and support sustainable safety performance across government entities, ministries, public sector organizations, financial institutions managing engineering infrastructure, oil and gas companies, utilities, manufacturing industries, mining operations, transportation infrastructure, and multinational corporations.

Objectives

- Analyze electrical hazards and evaluate workplace electrical risks.
- Develop practical knowledge for implementing industrial electrical safety procedures.
- Evaluate electrical systems and work environments using structured risk assessment techniques.
- Apply international electrical safety standards and industry best practices.
- Design effective electrical hazard control measures that reduce operational risks.
- Improve workplace safety through proper inspection, testing, isolation, and maintenance procedures.
- Strengthen incident prevention by identifying unsafe electrical conditions and behaviors.
- Implement Lockout/Tagout (LOTO), permit-to-work, and safe isolation procedures.
- Assess arc flash hazards, shock risks, and appropriate personal protective equipment requirements.
- Align industrial electrical safety practices with organizational objectives for safety, compliance, operational excellence, and continuous improvement.

Who Should Attend

This course is designed for electrical engineers, maintenance engineers, operations engineers, electrical technicians, maintenance technicians, commissioning engineers, facility engineers, utility engineers, project engineers, reliability engineers, automation engineers, maintenance supervisors, operations supervisors, engineering technicians, equipment inspectors, HSE officers, safety professionals, engineering consultants, and technical personnel responsible for industrial electrical systems.

The program is equally valuable for engineering managers, maintenance managers, operations managers, plant managers, facility managers, HSE managers, project managers, asset management professionals, quality professionals, executive managers, technical advisors, and decision makers responsible for electrical infrastructure, industrial safety, operational reliability, engineering asset management, and regulatory compliance.

Professionals working within government entities, ministries, public sector organizations, financial institutions managing engineering infrastructure, oil and gas companies, petrochemical facilities, electric utility providers, power generation plants, manufacturing industries, mining operations,

transportation authorities, airports, ports, water treatment facilities, infrastructure developers, and multinational engineering organizations will benefit significantly from the practical methodologies and internationally recognized electrical safety practices presented throughout the course.

Learning Outcomes

- By the end of this course, participants will be able to:
- Explain the principles of industrial electrical safety and electrical hazard management.
- Identify electrical hazards and perform structured workplace electrical risk assessments.
- Apply electrical safety standards, safe work procedures, and regulatory requirements.
- Interpret electrical safety documentation, procedures, and isolation plans.
- Implement Lockout/Tagout (LOTO), permit-to-work, and electrical isolation procedures correctly.
- Assess arc flash hazards, electric shock risks, and appropriate PPE requirements.
- Perform electrical inspections and verify safe working conditions before maintenance activities.
- Investigate electrical incidents and conduct root cause analysis to prevent recurrence.
- Apply emergency response procedures for electrical accidents and equipment failures.
- Support operational excellence through effective electrical safety management, compliance, and continuous improvement.

Course Outline

DAY 01

Fundamentals of Industrial Electrical Safety

- Principles of industrial electrical safety
- Electrical hazards and risk identification
- Electrical regulations, standards, and compliance requirements
- Electrical safety responsibilities and safety culture

PRACTICAL

Practical workshop on identifying workplace electrical hazards and risk assessment

DAY 02

Electrical Hazard Control and Safe Work Practices

- Electrical shock protection and grounding principles
- Arc flash hazards and arc flash risk assessment
- Personal Protective Equipment (PPE) selection and use
- Permit-to-work systems and electrical isolation procedures

PRACTICAL EXERCISE

Practical exercise on hazard control measures and safe work planning

DAY 03

Lockout/Tagout, Inspection, and Maintenance Safety

- Lockout/Tagout (LOTO) procedures
- Safe switching operations and equipment isolation
- Electrical inspection, testing, and verification procedures
- Safe maintenance practices for electrical equipment

PRACTICAL

Practical workshop on LOTO implementation and electrical safety inspections

DAY 04

Incident Prevention, Emergency Response, and Investigation

- Electrical incident prevention strategies
- Emergency response for electrical accidents
- Incident reporting and root cause analysis
- Risk management and continuous safety improvement

PRACTICAL APPLICATION

Practical application involving electrical incident investigation and corrective action planning

DAY 05

Advanced Electrical Safety Management and Operational Excellence

- Electrical safety management systems
- Compliance auditing and performance measurement
- Leadership in electrical safety and organizational safety culture
- Continuous improvement strategies for industrial electrical safety

FINAL WORKSHOP

Final workshop involving the development of a comprehensive Industrial Electrical Safety management plan integrating hazard identification, risk assessment, LOTO implementation, arc flash protection, electrical inspections, emergency preparedness, regulatory compliance, safety leadership, and continuous improvement to strengthen workplace safety, operational reliability, and organizational excellence.

Register or Request More Information

Course page: <https://quest-training.com/courses/industrial-electrical-safety-training-course>

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