Content Community Connection

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High Voltage Safety Training - Essential MV/HV Skills

View Course Details

COURSE DATES AND TIMES

May 14, 2026
10:00 am - 4:30 pm ET
June 18, 2026
10:00 am - 4:30 pm ET
July 16, 2026
10:00 am - 4:30 pm ET
August 20, 2026
10:00 am - 4:30 pm ET

High Voltage Safety Training exists to correct those assumptions.

This 6-hour, instructor-led program is designed to give electrical workers and safety leaders the judgment framework required to control Medium Voltage and High Voltage hazards under both normal and abnormal operating conditions. The course does not focus on theory alone. It focuses on the decisions that determine whether a system is truly safe to work on.

Participants learn how electrical energy behaves in distribution and substation environments, how hazards develop during switching and isolation, and why many incidents occur after equipment is believed to be de-energized.

The objective is not awareness. The objective is control.

Why High Voltage Safety Training Matters

High-voltage work exposes personnel to hazards that cannot be mitigated by experience alone. Arc flash, induced voltage, ground gradients, backfeed, and incorrect switching sequences continue to cause serious injuries in facilities where workers believed controls were in place.

This course addresses:

- Why isolation errors are more dangerous than live contact
- Why temporary grounding is a life-preserving control, not a procedural formality
- Why switching to documentation failures creates fatal exposure
- Why clearance violations escalate into multi-point fault paths
- Why PPE cannot compensate for incorrect system status

Participants learn how to recognize when a system is electrically safe, when it is not, and how to prove the difference.

Why is High Voltage Safety Training Important?

Our course is designed for frontline electrical workers responsible for Medium Voltage/High Voltage electrical systems, as well as supervisory and health and safety professionals who oversee high-voltage electrical safety work.

You will develop the knowledge and skills to properly assess the potential damage that electricity can cause to the human body and to understand the basic principles of safety under normal and abnormal conditions. You will also learn how to assist in determining the severity of potential exposure to Medium Voltage/High Voltage arc-flash hazards, plan safe work practices, and select appropriate personal protective equipment. You will also learn how NFPA 70E governs electrical hazards in distribution systems, as well as OSHA 1910.269.

During this High Voltage Safety Training course, you will learn to recognize and avoid electric shock in unsafe work areas. You will also learn the correct approach distances. Upon completion, you will have a better understanding of properly voltage-rated tools and the use of proper personal protection equipment. By educating workers on issues central to the safe performance of their everyday jobs, you can reduce and eliminate the risk of loss of life or serious injury in your workplace. Your safety and your coworkers' depend on it!

Review National, State, and Provincial Medium Voltage/High Voltage electrical safety standards and regulations.

This One-Day High Voltage Safety Course Will Focus On The Following Areas:

- Job Briefing Requirements
- Hazardous Energy Control (lockout/tagout)
- Switching Procedures
- Clearance Procedures
- Personal Protective Equipment (PPE)
- Flame Resistant (FR) Clothing
- Rubber Protective Equipment
- Live-Line Tools & Testing Requirements
- Working On or Near Exposed Lines
- De-energizing Lines and Equipment
- Personal Protective Grounding
- Substation Safety
- Special Conditions
- Capacitors
- Current Transformers
- Potential Transformer Hazards
- Fuse/Relay Coordination
- High Voltage Safety Training Requirements

What You Will Learn

You will learn to:

- Identify all MV/HV electrical energy sources and associated hazards
- Apply hazardous energy control and lockout procedures correctly
- Recognize induced current and ground gradient risks
- Select and install temporary protective grounding
- Interpret single-line diagrams for isolation planning
- Write and validate switching sequences
- Verify electrically safe work conditions
- Apply correct limits of approach
- Select voltage-rated tools and PPE
- Evaluate arc-flash exposure severity
- Apply regulatory and standard-based safety principles
- The emphasis is not on memorization. It is decision reliability.

Course Focus Areas

- Job briefing and hazard communication
- Hazardous energy control (lockout and isolation)
- Switching and clearance procedures
- Verification of isolation
- Personal protective equipment selection
- Flame-resistant clothing

- Rubber protective equipment
- Live-line tools and testing
- Work on or near exposed conductors
- De-energization and grounding
- Substation safety practices
- Special system conditions
- Capacitors
- Current transformers
- Potential transformer hazards
- Fuse and relay coordination
- High-voltage safety training requirements

Learning Outcomes

By the end of the course, participants will be able to:

- Recognize all MV/HV electrical hazards and their injury mechanisms
- Apply control methods that prevent exposure to hazardous energy
- Identify induced current and ground gradient formation
- Install temporary grounds correctly
- Validate switching documentation
- Interpret single-line diagrams accurately
- Write compliant isolation sequences
- Confirm electrically safe work conditions
- Maintain mandated safety documentation

Related Courses

- NFPA 70E Arc Flash Training
- CSA Z462 Arc Flash Training
- Electrical Safety for Non-Electrical Workers
- Electrical Safety for EHS Managers
- Electrical Safety Program Development

WHO SHOULD ATTEND

This course is intended for professionals who work on, near, or supervise high-voltage electrical systems, including:

- Utility line workers
- Substation electricians
- Electrical engineers
- Commercial and industrial electricians
- Electrical technicians
- Instrumentation mechanics
- Maintenance supervisors
- Health and safety professionals

If a worker participates in switching, isolation, grounding, testing, or verification activities, this training applies.

STUDENTS RECEIVE

- High Voltage Safety Training Course Certificate
- .6 Continuing Education Unit (CEU) Credits (6 Professional Development Hours)
- FREE 100-Page Digital Electrical Safety Handbook (Value $20)
- $100 Coupon Toward any Future Electricity Forum Event (Restrictions Apply)
- FREE Magazine Subscription (Value $25.00)
- Course Materials in PDF Format

COURSE OUTLINE

High Voltage Safety Training Course Outline

RECOGNIZING HIGH VOLTAGE ELECTRICAL SAFETY HAZARDS

A detailed review of critical electrical safety hazards created by energized electrical equipment:

- Insulation
- Power Cables
- Power Transformers
- Instrument Transformers
- Dealing With Fault Currents
- Disconnect Switches

- Switchgear
- Circuit Breakers
- Fuses
- Electrical Relays
- Motor Starters
- AC/DC Motors
- Capacitors
- Emergency UPS Systems

RESOLVING HIGH VOLTAGE ELECTRICAL SAFETY HAZARDS

Objective: Determine the controls used to protect workers from all energy sources created in the workplace. Benefits of a safe workplace include fewer injuries, lower worker compensation costs, reduced service interruptions, greater protection of capital investment, and increased uptime. This section provides a detailed blueprint that maximizes electrical safety and all the benefits it generates.

- Hierarchy of Controls
- Management Control
- Legislation
- Electrical Code
- Purchasing Controls
- Engineering Controls
- Safety Documentation
- Rules

- Safe Work Practices
- Safe Work Procedures
- Codes of Practice
- Operating Procedures
- Permits & Clearances
- Switching Procedures
- Physical Equipment
- Personal Protective Equipment
- Safety Equipment
- Signs and Barriers
- Equipment Protection
- Interlock
- Grounding
- Field Control
- Inspections
- Job Planning
- Pre-job Meeting
- Hazard Identification
- Hazard Reporting

- Work Methods
- Limits of Approach
- Switching Practices

GENERAL ELECTRICAL SAFETY REQUIREMENTS

- Review of Standards and OH&S Regulations
- HV electrical qualifications
- Poles and structures
- Obstructions on poles
- Properly informing electrical workers
- Working in service rooms
- Space around equipment
- Working with HV test equipment
- Insulated aerial devices

SWITCHING

This section of the course will instruct you on how to: interpret and use a single-line diagram to write a switching sequence to safely isolate an electrical device for work; validate existing operating orders and switching procedures; and develop and maintain mandated documentation for all electrical equipment isolation and maintenance work.

- Single Line Diagrams
- Using Prints

- Electrical System Drawings
- Safety Documentation
- Isolation
- Lockout/Isolation
- Switching Workshop

WORKING ON HIGH VOLTAGE ELECTRICAL EQUIPMENT

- Isolation and lockout
- Warning signs

WORKING ON DE-ENERGIZED HIGH VOLTAGE POWER SYSTEMS

- Isolation and lockout
- Person in charge
- Switching sequences
- Isolating devices
- Grounding and blocking
- Working with multiple authorities

WORKING CLOSE TO ENERGIZED HIGH VOLTAGE EQUIPMENT AND CONDUCTORS

- Minimum clearances
- General limits of approach

- Assurance in writing
- Assurance not practicable
- When is a worker specially trained and qualified
- Adjusted limits of approach
- Emergency work procedures
- Authorization by owner to perform work

COURSE TIMETABLE:

Start: 10 a.m. Eastern Time
Finish: 4:30 p.m. Eastern Time

Contact us Today for a FREE quotation to deliver this course at your company's location.

Request Quote