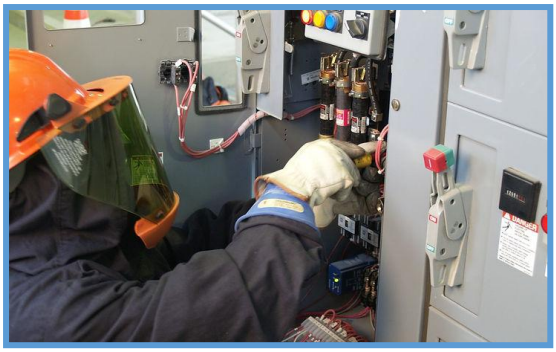
COURSE OVERVIEW EE1135-6M-IH
Electrical Safety Professional (E-Learning Module)



Course Title
Electrical Safety Professional
(E-Learning Module)

Course Reference
EE1135-6M-IH

Course Format & Compatibility
SCORM 1.2. Compatible with IE11, MS-Edge, Google Chrome, Windows, Linux, Unix, Android, IOS, iPadOS, macOS, iPhone, iPad & HarmonyOS (Huawei)

Course Duration
30 online contact hours
(3.0 CEUs/30 PDHs)

Course Description

This E-Learning is designed to provide participants with a detailed and up-to-date overview of Electrical Safety Professionals. It covers the scope of electrical safety, industry-specific risks in petroleum environments and voltage classifications; the common electrical hazards, job-specific hazard recognition, risk assessment process and using of hazard identification tools; the NFPA 70E and OSHA standards, IEC and IEEE standards applicable to petroleum facilities, company-specific electrical safety policies; and the lockout/tagout (LOTO) legal requirements.

During this interactive course, participants will learn the causes and effects of arc flash incidents and shock boundaries and incident energy levels; using and maintaining of arc-rated PPE and Arc flash labels and signage interpretation; the safe work practices and permit systems covering approach distances and restricted zones, electrically safe work condition procedures, hot work and energized electrical work permits and isolation, grounding, and barricading procedures; the electrical incident response protocols, rescue procedures for shocked personnel, electrical fire containment measures and post-incident investigation and reporting.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on electrical safety professional
- Discuss the scope of electrical safety, industry-specific risks in petroleum environments and voltage classifications
- Identify common electrical hazards, job-specific hazard recognition, risk assessment process and the use of hazard identification tools
- Explain NFPA 70E and OSHA standards, IEC and IEEE standards applicable to petroleum facilities, company-specific electrical safety policies and lockout/tagout (LOTO) legal requirements
- Recognize causes and effects of arc flash incidents and shock boundaries and incident energy levels as well as use and maintain of arc-rated PPE and apply Arc flash labels and signage interpretation
- Carryout safe work practices and permit systems covering approach distances and restricted zones, electrically safe work condition procedures, hot work and energized electrical work permits and isolation, grounding, and barricading procedures
- Apply electrical incident response protocols, rescue procedures for shocked personnel, electrical fire containment measures and post-incident investigation and reporting

Who Should Attend

This course provides an overview of all significant aspects and consideration of Electrical Safety Professional (E-Learning Module) for electrical engineers & technicians, maintenance personnel, health, safety & environment (HSE) professionals, facility managers & supervisors, construction and industrial workers, project managers & site engineers, electricians & apprentices, operations personnel, supervisory & management staff, new hires and trainees.

Training Methodology

This Trainee-centered course includes the following training methodologies: -

- Talking presentation Slides (ppt with audio)
- Simulation & Animation
- Exercises
- Videos
- Case Studies
- Gamification (learning through games)
- Quizzes, Pre-test & Post-test

Every section/module of the course ends up with a Quiz which must be passed by the trainee in order to move to the next section/module. A Post-test at the end of the course must be passed in order to get the online accredited certificate.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations:

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Fee

As per proposal

Course Contents

- Electrical Safety Fundamentals Basic Electrical Safety
- Fundamentals of Electrical Hazards
- Electrical Protection
    - Circuit Breakers
    - Distance
- Terminology
- Electrical Grounding
- Basic Rules of Electrical Action
- Preventing Accidental Electrical Contact
- Do's & Don'ts
- Myths & Misconceptions
- Training Objectives
- OSHA's Electrical Standards, NFPA 70 & 70E Electrical Safety
- Is Compliance with NFPA 70E Standard for Electrical Safety in the Workplace Mandatory?
- Can I be cited for not complying with NFPA 70E?
- Let's Start with a Few Cases History Examples
- Case History Continued
- Most Common Causes of Electrocution
- There are Direct and Indirect Types of Electrical Injuries
- The Anatomy of Electricity Flowing Through the Body
- It's your Responsibility to Know the Work Hazards
- Overhead Power Line Hazards
- Flashover
- Operating Equipment Near Overhead Power lines
- Arc Blast/Flash
- Employers must Protect Workers from Hazards Posed by Flames & Electric Arc
- Proper PPE for Electrical Safety Work
- Electrical Safe Work Practices Include:
    - Control – Use of GFCI (Ground-Fault Circuit Interrupter)
    - Job Site Generator Equipped with GFCI Protection
    - Control of Hazardous Energy

- What is LOTO?
- Training Requirements
- Lock-out/Tag-out Purpose
- Authorized Employee = Person Applying Controls
- Affected Employee
- Other Employees
- Difference Between Lock-out &Tag-out
- Hazardous Energy Sources for Lock-out Tag-out
- LOTO Program
- Employer Responsibility to Conduct Periodic Inspection of LOTO Program
- When to Use LOTO
- Isolating Devices
- Energy Control Devices
- Basic Steps for Lockout/Tagout Procedures
- Step #2-Notify all Affected Employees
- Step #3-Isolate all Affected Equipment
- Step #4-Lock-out & Tag-out Equipment
- Step #5-Release Stored Energy
- Step #6-Verify Isolation
- Step #7-Perform Servicing
- Steps for Removing Lock-out Tag-out
- Special Considerations
- The “Fatal Five” Causes of Lock-out/Tag-out-Related Fatalities

- Conclusion
- Quiz
- Electrical Safety Risk Assessment
- Risk Assessment Steps
- Risk Assessment Process
- Risk Assessment Calculation
- Risk Register Method
- Risk Matrix Method
- Protective Measures
- Quiz
- Levels of Protection for Electrical Fires

- What is an Electrical Fire?
- Common Causes of Electrical Fires
- Old Equipment & Appliances
- Not Keeping Up with Safety Codes
- Three Levels of Protection for Electrical Fires
- Building Level Fire Protection
- Circuit Breakers & Fuses
- Ground Fault Circuit Interrupters (GFCIs)
- Arc Fault Circuit Interrupters (AFCIs)
- Surge Protection
- Regular Electrical Inspections
- Room Level Fire Protection
- Smoke Detectors
- Fire Extinguishers
- Safe Appliance Use
- Fire-Resistant Construction Materials
- Rack-Level Fire Protection
- Specialized Fire Suppression Systems
- Temperature Monitoring
- Isolation of Electrical Equipment

- Test & Measurements for Electrical Fire Prevention
- Root Causes of Overheating in Electrical Systems
- Poor Connections.
- Insulation Failure
- Lightning
- Overloading
- Wiring Mistakes
- Tests and Measurements for Detecting Heat and Failing Components
- Visual Inspection
- Thermography
- Connection/Switch Resistance
- Insulation Testing
- Ground Resistance Testing
- Transformer Turns Ratio
- Circuit Breaker Testing
- Power Quality Measurements
- Quiz
- Electrical Safety Risk Assessment
  - What are Electrical Safety Regulations & Standards?

    - Common Electrical Related Hazards
    - Damaged Equipment & Power Tools
    - Inadequate Wiring & Overloaded Circuits
    - Exposed Electrical Parts
    - Overhead Power Lines
    - Improper Grounding
    - Wet Conditions
- Electrical Safety Precautions
- Electrical Safety Regulations
- The Electrical Safety Act 2002
- The Electrical Safety Regulation 2013
- Electrical Safety Standards in the World
- Electrical Safety Regulations & Standards you Must Know
- Introduction
- Overview of Key Regulations: OSHA (Occupational Safety and Health Administration)
- Key OSHA regulations for your Shop
- NFPA 70E (National Fire Protection Association)
- Industry-Specific Standards
- Electrical Safety Hazards & Precautions
- How to Stay Compliant
- Conduct Regular Safety Audits
- Safety Audit
- Implement a Comprehensive Safety Program
    - Hazard Assessment & Risk Management
    - Safe Work Practices
    - Training & Education
- 5 Benefits of Safety Training Program
- Maintain Proper Documentation
    - Hazard Assessments
    - Safety Audits
    - Training Records
    - Maintenance Records
- Importance of Compliance Documentation
- Use Qualified Personnel
- Stay Updated on Regulatory Changes
- Conclusion
- Control of Hazardous Energy (Lockout/Tagout)
- What is hazardous energy?
- What are the harmful effects of hazardous energy?
- Top 5 Dangers of Hazardous Material
- What can be done to control hazardous energy?
- Quiz
- Electrical Hazards & Arc Flash Awareness
- Class Outline
- Accident Statistics
- National Safety Council Statistics

- Nonfatal Electrical Accidents Involving Days Away from Work, 1992-2001
- Electrical Work Activities were Involved in more than Two-thirds of the cases
- Introduction to Electrical Hazards
- Hazards of Electricity
- Electrical Shock
- Dangers of Electrical Shock
- How is an Electrical Shock Received?
- Electrocution
- Electrical Burns
- Arc Flash
- Arc Blast
- What Happens During an Arc Flash /Blast?
- Laboratory Controlled Arc Blast
- Short Circuit/Arc Fault
- Electrical Arc Flash
- Results
- Arc Flash PPE
- What About Circuit Protection?
- Are there Any Circuit Protection Devices that Can Suppress Fault Currents During Arc Flash Conditions?
- Industry Standards for Arc Flash Prevention
- Compliance With Osha Involves Adherence to a Six-Point Plan
- Qualified vs Unqualified
- Why A Safety Program
- Hazard Video
- 130.4 Approach Boundaries to Energized Electrical Conductors or Circuit Parts
- Approach Boundaries – NFPA 70e
- Limited Approach Boundary
- Minimum Required Labeling
- Hazard Category One
- Hazard Category Two
- Hazard Category Three
- Hazard Category Four
- So, What Do I Do If I'm (Way) Above 40 Cal/Cm2
- Solutions
- PPE / Fr Clothing
- Personal Protective Equipment (PPE)
- Depending on the Task, you may Need
- Prohibited Clothing
- Category One Clothing 5 Cal/Cm2
- Category Two Clothing 11 Cal/Cm^2 Kit
- Category Three Clothing 25 Cal/Cm^2
- Category Four Clothing 40 Cal/Cm^2
- 100 Cal/Cm2 Fr Rated Clothing
- Safe Work Practices OSHA 1910.333 (a) (1) & NFPA 70E 130 (A) (1)
- Safe work Practices
- Identifying Other Electrical Hazards

- Inadequate Wiring Hazards
- Overload Hazards
- Grounding Hazards
- Grounding Path
- Identifying Disconnects
- Clear Spaces
- Guarding of Live Parts
- Clues That Electrical Hazards Exist
- Conclusion
- Quiz
- Electrical Work JSA (Job Safety Analysis)
- What is Electrical Work JSA (Job Safety Analysis)
- Key Components of Electrical Work JSA in Oil & Gas
  - Job Details
  - Task Breakdown
  - Hazard Identification
  - Risk Assessment
  - Control Measures
  - Authorizations and Approvals
  - Emergency Planning
  - Communication and Toolbox Talk
- Example: JSA for Troubleshooting Electrical Panel in Zone 1 Area
- Job Steps, Hazards & Control Measures
- Emergency Preparedness
- Team Members & PPE Required
- Approval Sign-off
- Job Safety Analysis (JSA) Template – Electrical Work (Oil & Gas Industry)
- Step-By-Step Task Breakdown, Hazards, & Controls
- Common Hazards for Electrical Work in Oil & Gas (For Reference)
- Standard Control Measures (Suggested for Electrical Tasks)
- Required Permits & Authorizations
- Personnel Sign-off
- Benefits of Electrical JSA in Oil & Gas
- JSA vs Hira
- Introduction
- What is a Job Safety Analysis (JSA)?
- Importance of JSA in Electrical Work
- Common Hazards in Electrical Work
- Components of an Electrical Work JSA
- Steps to Conduct an Electrical Work JSA
- Essential Safety Measures for Electrical Work
- Job Safety Analysis (JSA) for Electrical Work Purpose
- 1. Job Steps & Potential Hazards
- 2. Control Measures
- 3. Responsibilities
- 4. Emergency Procedures
- 5. Personal Protective Equipment (PPE)

- 6. Training Requirements
- Conclusion
- Quiz
- Electrical Safety Fundamentals
- Arc Flash Safety
- OSHA Cited Violations: Fy 2010
- OSHA Violations Fy 2010
- OSHA Violations Fy 2011
- Electrical Hazards
- Arc Flash Defined
- Arc Flash
- Electrical Safety Boundaries
- Arc Flash Hazards
- Causes of Arc Flash
- 10 Common Causes of an Arc Flash
- Causes of Arc Flash
- Arc Blast
- Arc Blast Hazards
- Electrical System Susceptibility
- Arc Flash Energy Released
- Possible “Traps”
- Current/Reaction Chart
- Need for an Arc Flash Study
- Arc Flash Study
- Aids to Safe Operations
- Arc Flash Hazard Analysis
- Safe Distance Calculations
- Arc Flash Boundaries
- Flash Protection Boundary
- PPE Based on Incident Energy Preplan
- PPE By Hazard Risk Category
- Ohm’s Law
- Power Formula
- Horsepower & Watts
- Qualified Person
- Types of Damage
- Caution!!
- Signage
- Hazard Preplan
- Safety Precautions: PPE
- PPE
- Match PPE to Task
- Tools
- Safety
- Safe Work Practices
- Avoiding Arc Flash
- Some Questions Osha Will Ask

- Summary
- Quiz
- Electrical Safety Emergency Response
- Safety First
- Definition
- Key Objectives
- Common Electrical Emergencies Include
- Arc flash
- Emergency Response Steps
- Essential Tools & Equipment
- Training & Preparedness
- Standards & Compliance
- Emergency Contacts (Fill This In)
- Emergency Response
- How to Help Someone That's Been Electrically Shocked
- Review
- Emergency Response Plans for Electric Shock Incidents
- Key Takeaways
- Why you Need an Emergency Response Plan
- Components of an Effective Response Plan
- An effective Incident Response Team Comprises of
- Detailed Instructions
- Equipment Location
- Contact Details
- Visibility and Accessibility
- How to Assess Electrical Hazards in Your Work Environment
- Immediate Actions to Take in the Event of an Electric Shock
- Conclusion: Prioritize Safety in Electric Shock Incidents
- Incorporating Electrical Safety into Emergency Response Plans
- Why Do You Need an Emergency Response Plan for Electrical Safety Matters
- Key Considerations for Preparing an Emergency Response Plan for Electrical Safety
- Steps to Integrate Electrical Safety into Your Emergency Plan
- Benefits of Incorporating Electrical Safety into Emergency Plans
- Conclusion
- What to do in an Electrical Emergency on site
- What to Do in an Electrical Emergency
  - Step 1: Don't Touch Someone Receiving an Electric Shock
  - Step 2: Call emergency services
  - Step 3: Turn off the power
  - Step 4: Administer first aid
- The Importance of Safety Training
- Quiz
- The Osha Standard for the Control of Hazardous Energy
- OSHA
- Why is Controlling Hazardous Energy Sources Important?
- How Can Employers Protect Workers?

- What Do Workers Need to Know?
- What Must Employers Do to Protect Workers?
- Workers' Rights
- Quiz
- Accident Prevention Manual Electrical Fire Containment Measures
- Electrical Safety
- Fundamentals of Electrical Hazards
- Definitions
- Electrical Injuries
  - Have you ever been shocked?
  - Internal Injuries
  - Skin and Eye Injuries
  - Falls
  - Cardiopulmonary Resuscitation (CPR)
- Examples of Burns
- Selecting Equipment
- Installing Equipment
- Safety Devices
- Protective Devices
- Control Equipment
- Test Equipment
- Specialized Processes
- Grounding
  - Codes to consider for grounding purposes
  - System grounding
  - Some systems are not required to be grounded
  - Ground Rod
  - Equipment grounding
  - Equipment grounding for fixed equipment includes noncurrent-carrying metal parts likely to become energized
  - Equipment ground noncurrent-carrying metal parts regardless of voltage
  - Ground the following equipment
  - Maintenance of grounds
  - Three-wire adapters
  - Double-insulated tools
- Hazardous Locations
  - Establishing limits
  - Reducing hazards
  - Planning electrical installations
- Explosion-Proof Apparatus
- Inspection
- Rotating & Intermittent-Start Equipment Inspection
- High-Voltage Equipment Inspection
- Link Belt Crane Accident
- Maintenance
- Lockout / Tagout
- Lockout Station Centro De Seguridad

- Employee Training
- Quiz
- NFPA 70e Safety Training
- 2024 NFPA 70E Safety Training
- The Electrical Association Who We Are
- Learning Outcomes NFPA 70e Safety Training
- NFPA 70e 2024
- Consider Conditions of Maintenance & Testing
- Definitions
    - Arc Flash
    - Arc Blast
    - Electrical Safety Program
    - Electrically Safe Work Condition
    - Electrically Safe Work Condition
    - Limited Approach Boundary
    - Restricted Approach Boundary
    - Qualified Person
- The National Electrical Code 2023
- 2023 NEC® 110.16(B)
- NEC 2020® 110.16 Arc Flash Hazard Warning
- Top 10 Osha Violations Fy 2021
- Fy 2022 Osha Violations
- 70e
- 105.3
- Article 110 General Requirements for Electrical Safety-Related Work Practice
- 110.2 Electrically Safe Working Condition
    - (A) Policy. (New 2023)
    - (B) When Required. (New 2023)
    - Exception No. 3
    - Exception No. 4
    - Exception No. 5
- 110.3 Electrical Safety Program
- Hierarchy of Risks
- 110.4 Training Requirements
- 110.4(A)(1) Training Requirements
    - Qualified Person
- 110.4(A)(2) Training Requirements
    - Unqualified Person
- 110.4(A)(3) Training Requirements
- 110.4(A)(4) Types of Training
- 110.4(A)(5)Training Documentation
- 110.4(B) Lockout/Tagout Procedure Training
- 110.4(C)(1) Emergency Response Training
- 110.4(C)(2) Emergency Response Training
- 110.4(C)(3+4) Emergency Response Training
- 110.5(A)Host and Contract Employer
- 110.5(B) Host and Contract Employer

- 110.5(C) Host and Contract Employer
- 110.6 Test Instruments & Equipment
- 110.7 Cord-and-Plug-Connected Equipment
- 110.8 GFCI Protection
- 110.9 Overcurrent Protection Modification
- Establishing an Electrically Safe Work Condition
- 120.2 Lockout/Tagout Program
- 120.1 Lockout/Tagout Program
- Personal LOTO
- 120.3 LOTO Principles
- Control devices –Not Approved Lockout
- Labels for Power Sources – All Sources
- 120.4 Lockout / Tagout Equipment
- LOTO Devices 120.4 (B)
- 120.6 LOTO: Lock-Tag-Test
- 120.6(7) Voltage Testing
- 120.6(7) LOTO Testing for Voltage
- Work Involving Electrical Hazards
- Fault Current and IC Rating
- 130.1 Scope
- Article 130.2 Energized Electrical Work Permit
- Article 130.2(B) Elements of Work Permit
- Article 130.2(C) Exemptions to Work Permit
- Approach Boundaries
- Approach Boundaries for Shock Protection
- Table 130.4(E)(a) Shock Protection Approach Boundaries for A/C Systems
- 130.4 Limited/Restricted Approach Boundary
- Distances
- Energy Comparisons
- Flash Boundary
- ARC Flashes
- Electrical Arc Components
- 130.5 Arc Flash Risk Assessment
- 130.5(B) Arc Flash Risk Assessment
- 130.5(F) Methods to Determine PPE
- Arc Flash Identification
- Table 130.5(C) Estimate of the Likelihood of Occurrence of an Arc Flash Incident for ac and dc Systems
- Table 130.7(C)(15)(a) AC Systems Arc Flash Boundaries
- Table 130.7(C)(15)(c) Protective Clothing
- Basic Risk Assessment
- 130.5(H) Equipment Labeling
- 130.7(H) Required Label for 70E & OSHA
- Plant Floor Label
- CDC-NIOSH: Perform Lockout/Tagout
- Number of Fatal Electrical Injuries by Event Code all Ownerships, 2003-2015
- Number of Nonfatal Electrical Injuries by Event Code all Ownerships, 1992-2015

- Arc Flash & Arc Blast
- Current-Limiting Fuse – Let-Through
- Exceeding Interrupting Rating
- Other Arc Flash Safety Considerations
- 130.7 PPE
- Personal Protective Equipment (PPE)
- Class of Glove – Ratings Phase-to-Ground *or* Phase-to-Phase if Close Quarters
- Personal Protective Equipment (PPE)
- Working Live
- Rating Flame Resistant Vs Arc Resistant
- 130.7(D)(1) Other Protective Equipment
- 130.7
  - 130.7(D)(1)(c)
  - 130.7(D((1)(e)
- 130.7(E) Alerting Techniques
- 130.7(E)(2) Safety Barricades
- PPE Needs Calorie Count / Voltage Rating
- Employee Clothing
- Personal Protective Equipment (PPE)
- Quiz
- Case Studies
- Case Study: Arc Flash Explosion at an Offshore Platform Incident
- Arc Flash Explosion at an Offshore Platform Incident:
- Incident: Electrician Caused a Short Circuit At 480v MCC; Arc Flash Occurred
- 1. Arc Flash in MCC Room – Offshore Platform
- 2. Cable Overheating at Refinery
- 3. Explosion Due to Improper Grounding
- 4. Electrocution During Lighting Maintenance
- 5. Diesel Generator Fire – FPSO
- 6. Faulty Cable Splice in Hazardous Zone
- 7. Transformer Explosion at Gas Plant
- 8. Failure of Ups System – Offshore Drilling Rig
- 9. Electrical Shock While Using Portable Equipment
- 10. Fault in Flameproof Junction Box
- 11. HV Switchgear Flashover
- 12. Overloaded Motor Circuit – Gas Compressor
- 13. Static Accumulation in Tank Farm
- 14. Electric Panel Fire – Offshore Living Quarters
- 15. Incorrect Cable Routing Near Process Piping
- Quiz
- Electric Shock First Aid Treatment
  - Danger
  - High Voltage
  - Low Voltage
  - Response
  - Unresponsive Casualty
  - Unresponsive and not breathing normally - giving CPR

    - Unresponsive & Not Breathing Normally - Giving CPR
    - Defibrillation
    - Burns
    - Other Injuries
- Quiz
- Fire Extinguisher Safety
- Overview
- Introduction
- Stay Informed
- Fight Or Flee
- 4 Classes of Fires
- Fire Extinguishers Explained
- Effectiveness
- Labeling
- Types of Extinguishers
- Air-Pressurized Water
- APW Safety
- Carbon Dioxide
- Co_2 Safety
- Dry Chemical
- Where to Find
- Using An Extinguisher
- P.A.S.S. Technique
- Quiz
- Guide to Electrical Fires
- What is an Electrical Fire?
- Common Causes of Electrical Fires
- Warning Signs
- Improve your EHS Management
- What to Do in Case of an Electrical Fire
- Electrical Fire Prevention & Safety Tips
- Fire Safety Tips
- Create your Own Electrical Maintenance Checklist
    - Promote Safe Electrical Practices
    - Develop an Emergency Plan
    - Install Smoke Alarms
    - Prepare the Necessary Fire Safety Equipment
- Electrical Fire Protection
- What Causes Electrical Fires?
- What is Considered an Electrical Fire?
- How Long Does It Take for an Electrical Fire to Start?
- How to Prevent Electrical Fires in the Workplace
- Will GFCI Prevent Fire?
- Can Surge Protectors Prevent Electrical Fires?
- What are Tips for Electrical Fire Safety?
- Identify the Biggest Hazards
- Inspect these High-Risk Areas

- Install & Maintain Fire Detection & Suppression Systems
- Educate Staff on Fire Safety & Evacuation Plans
- Which Type of Fire Extinguisher is Used for Fire on Electrical Equipment?
- Safe Extinguishing Mediums for Electrical Fires
- Unsafe Extinguishing Media Electrical Fires
- Workplace Fire Extinguisher Regulations
- How to Put Out an Electrical Fire Without an Extinguisher
- Quiz
- Post-Incident Investigation & Reporting
- Objective
- Introduction
- Common Electrical Incidents in Oil & Gas
- Regulatory & Industry Standards
- Immediate Response to an Incident
- Forming the Investigation Team
- Investigation Timeline
- Evidence Collection
- Interviewing Witnesses
- Root Cause Analysis Tools
- Example – Case Study: Arc Flash Incident
- Reporting Structure
- Key Reporting Guidelines
- Regulatory Reporting
- Role of Electrical Forensics
- Preventive Action Planning
- Feedback Loop to Safety Systems
- Communication & Learning
- Barriers to Effective Investigation
- Overcoming Challenges
- Case Study Summary
- Best Practices Checklist
- Conclusion
- Accident/Incident Reporting & Investigation
- Definitions
- Method
- Referenced Practices
- Quiz