



## **Qualified Level Training – NFPA 70E (Approximately 4 hours)**

- I. Introduction
  - A. Electrical Injury statistics
  - B. Types of Electrical injuries
  - C. Types of Electrical Accidents
  - D. Who is Responsible for Safety
  - E. Primary Electrical Hazards
    - 1. Shock/Electrocution
    - 2. Arc Flash/Blast
  
- II. Electrical Hazard – Shock
  - A. Contact & Near Approach
  - B. Voltage & Shock Distance
  - C. Ohm’s Law and Shock
  - D. “It’s Only” syndrome
  
- III. Electrical Hazard - Arc Flash
  - A. Release of Energy
  - B. Causes
  - C. Examples – Video clip
  - D. Qualified & Non-qualified personnel
  - E. Burn Prevention
    - 1. Cellular damage degrees in burns
    - 2. Impact of Complacency
  
- IV. Electrical Standards
  - A. Working safely on de-energized systems
    - 1. Lockout/Tagout (LOTO)
    - 2. NFPA 70E Article 120
  - B. Working safely on energized systems
    - 1. NFPA 70E Article 130
  - C. Importance of 50Volts
  - D. Justification for Energized Work
  - E. >50V Rule
  - F. Checking your test equipment
    - 1. Samples of electrical issues
  - G. Voltage Rated Tools
    - 1. What a VR tool is
    - 2. Importance of VR Tools
    - 3. Typical Construction
  - H. Insulated Mats

- I. Ground Fault Devices
- J. Extension Cord
- K. Ladders
  
- V. Personal Protective Equipment (PPE) Requirements
  - A. Voltage Rated Gloves
    - 1. VR Glove Classifications
    - 2. Glove Testing
    - 3. Leather Keepers
  - B. Conductive Apparel
  - C. Case Studies & PPE Usage
  - D. Arc Rated Garments
  - E. Face Shields
  
- VI. Arc Flash Assessments
  - A. Minimizing Electrical Energy Potential
  - B. Arc Flash Studies
  - C. Hazard Categories & Incident Energies
  - D. Using the assessment for PPE
    - 1. Determining proper Personnel Protective Apparel
    - 2. Determining proper Personnel Protective Equipment
    - 3. Other Arc Rated PPE
  - E. PPE Maintenance Requirements/ Care
  - F. Electrical Work Permit
    - 1. Diagnostic vs. Non-diagnostic work
  
- VII. Protecting Everyone else
  - A. Boundaries
    - 1. Types
    - 2. How to determine – labeling
  - B. Putting it all together
    - 1. Keeping the Non-qualified personnel out of boundaries
    - 2. Making good decisions about PPE us
  - C. Arc Flash Summary
  
- VIII. Common OSHA subpart S violations
  
- IX. Conclusion
  - A. Questions
  
- X. Hands-On Training (Optional)