



# Electrical Safety

## Basic NFPA-70 1-Day Course

Typically provided as a 1-day course, training includes classwork in the morning and hands-on instruction in the afternoon. Course is designed as an introduction for new employees and as a safety refresher for more experienced employees who are exposed to potential electrical hazards. In some states, course qualifies for CEU or PDH hours.

**General Electrical Maintenance Safety:** Combines the principles of electrical safety, lock-out/tag-out, worksite safety engineering, safe work practices and use of protective devices/products, special clothing, and personal protective equipment.

**Review of a Recent History of Public Sector Electrical Shock, Electrocutation, Burn and Arc Flash Accidents:** Reviewed as case studies, various incidents applicable to this course.

**Basic Electrical Theory and Electrical Systems:** Educates or reminds employees on how electricity works, which conductors are energized, neutral, or grounded, what nominal voltages (phases) are common to water utility facilities and other aspects of basic plant and lift station electrical facilities.

**Effects of Electrical Energy on the Human Body:** Describes the impact of electrical current, thermal energy and vaporized copper on human tissues (and organs).

**Maintenance of De-energized Systems:** This section outlines how isolation and complete shut-off of power sources is a great option for many maintenance procedures. It covers lock-out/tag-out, testing and grounding, and OSHA mandates related to lock-out/tag-out (such as requirements for written policy, multiple lockouts, exclusive control options, etc.)

**Maintenance of Energized/Partially De-energized Systems:** This section covers the need to guard employees from energy with personal protective equipment, insulated tools, shields, insulation matting, and/or use of other special tools and safety products designed for electrical work.

**Determining Arc Flash Potential and Protection from Arc Flash:** This section reviews conditions likely to produce an arc flash occurrence. Special procedures to prevent arc flash are summarized.

**Safe Clearance Distances, Limited/Prohibited Approach Boundaries and F/R Clothing Relative to Nominal Voltages:** This section adds an additional safety element by delineating perimeters around arc flash potential locations and matches fire resistive setting clothing needs with locations and distances.

**Limits of Qualification and "Specific Procedure" Locations:** Certain locations pose a higher level of risk and should only be clear for more qualified individuals and/or persons following special procedures. This section discusses qualification thresholds and typical higher risk locations.

**Inspection and Safeguarding of Electrical Installations:** This section studies facility safety features and conditions, gives students examples of typical unsafe electrical installations and shows them how to use forms and other inspection tools.

**Virtual Exercises:** The final segment uses virtual exercises in an interactive fashion where numerous situations are presented and segmented groups of attendees solve the shock, burn, electrocution and arc flash problems.

