



**Environment, Health, & Safety
Training Program**

**EHS 0544 QEW1 Practical
Course Syllabus**

Subject Category: Electrical Safety
Course Length: 2 hours
Delivery Mode: N/A

Course Prerequisite: EHS: 0116, 0123, 0370, 0540-0543, 0545
Medical Approval: None
Frequency: 3 years

Course Purpose: This is not a training course. This course code is the practical certification for a QEW to prove their knowledge of electrical safety through demonstrated knowledge and application of electrical safe work practices designed to meet the minimum requirements for electrical workers to be able to be considered "qualified" per the Lab's Electrical Safety Program and NFPA 70E.

Certification Objectives: Upon completion of the certification examination the student will have successfully completed and demonstrated the following practical skills of a QEW1:

- Explaining the expectations for "Skill of the Craft" as it pertains to their work authorization.
- Differentiate between safe and unsafe work practices in a safe environment.
- Perform PPE and tool inspection.
- Prepare and demonstrate proper use of PPE, tools and possible work site necessities including barriers, barricades, insulating blankets, etc.
- Interpret Arc Flash labels, calculations and the implications with regards to QEW safety.
- Identify exposed energized circuit parts from other parts of electrical equipment.
- Determine component nominal voltage for all exposed energized conductors and circuit parts.
- Discuss emergency rescue techniques for a given scenario.
- Perform an Electrical Hazard Analysis (Shock and Arc Flash)
- Select an appropriate voltage detector and demonstrate how to use detector to perform absence of voltage testing (ZVV).
- Explain the AC and DC Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection as specified in 70E and found in Tables 7.3AC and 7.3DC in the ESM
- Explain Modes of Work and the limitations and hazards associated each mode.

Subject Matter Expert: Ari Harding

Training Compliance Requirements: LBNL Electrical Safety Manual, EHS Safety Manual (formerly PUB-3000)-Chapter 8, Electrical Safety Program, 29CFR 1910.147, 29CFR 1910.333, NFPA 70E

Certification Materials: QEW is to bring all of their PPE, tools, meters required for them to perform QEW1 level work transitioning between Modes 0 – 3.

Performance Criteria: Course credit will be given upon proving **Proficiency** for each of the items listed above. If the QEW passes, but is **not proficient**, they will be required to re-take EHS 0543 prior to attempting Certification. If the student does not pass, they will be given a list of areas of weakness and will be directed back to the appropriate Electrical Safety class for re-training.

Web Resource: <http://electricalsafety.lbl.gov/>