ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY

Environment, Health, & Safety
Training Program

EHS 0560 QEW3 High Voltage Electrical Safety
Course Syllabus

Subject Category: Electrical Safety
Course Length: 14 hours (Day 1&2: 6 hours + 1 hour test, x2)
Delivery Mode: Classroom

Course Prerequisites: EHS0557 (QEW 2 Approved)
Medical Approval: None
Frequency: Every 3 years

Course Purpose:
This is a 2-day course required for QEW3. The course provides a foundation for workers to understand electrical safety principles related to high voltage utilities work (>750 VAC, 12.47 kVAC and up to 115 kVAC). This course is not for R&D high voltage, and is restricted to Facilities high voltage workers, supervisors, engineers, and EHS Electrical Safety personnel. It meets the training requirements of OSHA 1910.269 and OSHA 1926 Subpart S.

Course Objectives: Upon completion of the course the student will be introduced to the following:

- High Voltage Electrical Injuries and Emergency Response.
- Role of the QEW2 in providing assistance to non-QEW and QEW1 personnel.
- Know some of the effects of high voltage that are not present in low voltage.
- Understand how high voltage hazards are different from low voltage.
- Be able to identify the source regulations for high voltage.
- Be able to perform a Shock Hazard Analysis and Arc Flash Hazard Analysis for high voltage systems, including selecting approach boundaries and PPE.
- Be able to select and use the appropriate tools to perform ZVV on high voltage equipment.
- Be able to select and use the appropriate tools perform high voltage grounding.
- Understand the hazards associated with step and touch potential, and the purpose of high voltage substation grounding.
- Know the safety requirements for special locations and special tasks.
- Understand the importance of operational control and impact on lab operations.

Subject Matter Expert: Mark Scott, Stephanie Collins

Training Compliance Requirements: LBNL Electrical Safety Manual, EHS Safety Manual (formerly PUB-3000)- Chapter 8, *Electrical Safety Program,* 29 CFR 1910.269, 29 CFR 1926 Subpart S, NFPA 70E

Course Instructional Materials: PowerPoint presentation and video

Performance Criteria: Student must pass a written test to demonstrate their ability to use the classroom resources provided to receive course credit.

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