

Energized Overhead Contact Systems (OCS) Line Safety

10 Days, 7.0 CEUs

This comprehensive 10-day program is designed to assist in meeting the regulatory requirements for “Qualified Workers” involved in maintaining energized overhead contact systems (OCS). OCS maintenance technicians learn special precautionary techniques and the proper use of personal protective equipment, such as insulating rubber gloves, blankets, and line hoses, insulated tools and other protective measures to reduce the risks associated with the hazards of electric shock and arc flash.

This course includes lecture discussions, supplemented with video training, energized work procedures and hands-on work exercises. Maintenance technicians and linemen involved in energized overhead contact systems work will find this course invaluable.

Lab and Classroom Attire

AVO is committed to the personal safety of each participant and requires safety glasses, long pants and ANSI rated “safety-toe” work shoes for lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open-toe shoes and shorts are not considered appropriate attire for the classroom.

Learning Objectives:

To receive 7.0 CEUs, the participant must attend 10 days of class (70 contact hours) and attain a minimum average grade of 80% (overall grade will consist of 50% lab and 50% final exam). Upon completion of this course and lab practice, the participant will demonstrate that he/she is able to:

- Explain the hazards of electricity and their effects.
- Perform hazardous energy control as required by OSHA.
- Employ installation of protective grounding for personnel protection.
- Identify the requirements for good energized work procedures.
- Select appropriate personal protective equipment for a variety of applications.
- Properly care for and use electrical protective equipment.
- Utilize appropriate techniques for use of insulating equipment.
- Describe specific equipment hazards of electrical equipment.
- Work safely on or near energized overhead contact systems.

SCOPE

Day 1* (7 contact hours)

- I. Introduction (0.5 hr)
- II. Hazards of Electricity (1.0 hr)
 - A. Electrical Shock
 - B. Electrical Arc Flash
 - C. Electrical Arc Blast
- III. Deenergized Work (LOTO) (2.5 hr)
 - A. Deenergization
 - B. Confirming a System is Deenergized
- AM Break
 - C. One-Line Diagrams
 - D. Lockout/Tagout

- E. Application of Control
- F. Additional Requirements
- G. Additional Regulatory Requirements for Electrical Lockout
- H. Typical Minimal Lockout or Tagout System Procedures
- Lunch
- IV. Personal Protective Grounding (3 hr)
 - A. Regulatory Requirements for Grounding
 - B. Purpose of Protective Grounds

- C. Sizing of Protective Grounds
- D. Effects of Current and PPE Grounding
- E. Grounding Equipment
- F. Personal Protective Ground Jumper Testing
- PM Break
 - G. Grounding Equipment Manufacturers/Suppliers
 - H. Application of Protective Grounds
 - I. Induced Voltages and Currents on Deenergized Circuits and Equipment

*Class scheduling times may vary based on discussions and size of class

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SCOPE (continued)

Day 2 (7 contact hours)

- V. Energized Work (2.5 hrs)
 - A. Definition of Energized Work
 - B. Definition of Qualified Person
 - C. Electrical Hazard Risk Assessment Considerations
 - D. Training Requirements of Qualified Persons
- AM Break
- E. Regulatory Requirements for Energized Work
- F. Overhead Line Clearances
- G. Protective Equipment and Tools

- VI. Personal Protective Equipment (1.5 hrs)
 - A. Protective Techniques
 - B. Electrical Protective Equipment
 - C. Arc Flash Protective Equipment
 - D. Arc Blast Protective Equipment
 - E. Other Protective Equipment
 - F. Energy Detection Equipment

Lunch

- VII. Specific Equipment Hazards with OCS (2 hrs)
 - A. Transformers
 - B. Circuit Breakers
 - C. Fuses
 - D. Capacitors
 - E. Batteries

PM Break

- F. Emergency Generators
- G. Overhead Contact Systems (OCS)

- VIII. Written Exam (Participant must pass with 80% to move on to labs) (1 hr)

Day 3-10 (56 contact hours)

- IX. Nine (9) Hands-on Labs (55 hrs)
 - A. 9 tasks specific to site requirements
 - B. Discussion of lab performance
- X. Conclusion (1 hr)
 - A. Final Lab Test