



Introduction to Safety – Unit Three: Personal Protective Equipment

Lab 3: Arc Related PPE Clothing

Student Name: _____

Description of Topic

Electricity is capable of flowing through the air if the voltage is high enough and other conditions are favorable. An example is lightening. Electricity can also flow from one conductor in an electrical panel to another. If the arc is strong enough, it is capable of giving off enough energy to cause harm, especially to an electrician or technician working inside an electrical power panel. The result can be a severe burn to any part of the body that is exposed directly, or through a thin layer of clothing.

When working inside an electrical panel, wearing various types of personal protective equipment (PPE) is required in this exercise, the student is required to replace a fuse while wearing the proper PPE.

Materials Required

- Helmet
- Ear plugs
- Safety glasses
- Arc-rated face shield
- Leather protective gloves
- Rubber insulated gloves
- Arc-rated clothing
- Fuse removal tool

Objective

- The student will replace with a fuse puller a defective fuse with one that is functional while wearing the proper PPE.

Lab Assignment

- After attending a lecture on the steps to take and the equipment to use so that you can avoid being infected by BBPs, or after completing the reading assignment, you should be
- Ask your assigned instructor to pour ½ cup of cranberry juice on the floor wearing the proper PPE gear and using a cleaning/disposal BBP kit, demonstrate to your instructor the steps that need to be taken to clean up and disinfect the contaminated area. Also, write a one-page report on the procedure that you followed.





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Lab Assignment

After attending a lecture or completing the theory materials in the reading assignment, the following lab exercise procedural steps should be performed:

Step 1

Ask the instructor to explain how to use a fuse puller to remove and replace an old fuse with a new one in an electrical power panel, and how to determine what replacement fuse to use. Also, ask the instructor to demonstrate how to inspect rubber gloves.

Step 2

Find a pair of safety glasses to wear.

Step 3

Research the Internet to find the proper hard hat to use when working with electricity. Then select the proper type in the storage cabinet.

Instructor Approval: _____

Step 4

Research the Internet to find the proper face shield to wear when working with electricity. Then select the proper type in the storage cabinet.

Instructor Approval: _____

Step 5

Research the Internet to find information regarding which category of rubber gloves to wear and how it is color-coded for a 1KV rating so that the proper color is selected from the storage cabinet.

Instructor Approval: _____





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Step 6

Find a pair of leather gloves in the storage cabinet to wear over the rubber gloves.

Step 7

Dress yourself with all of the clothing items listed above and arc-rated coveralls.

Step 8

With the fuse puller and the power off, open the electrical panel, remove and replace the old fuse.

Note: In a real life situation, the power in the panel would be live.

Instructor Approval: _____

Step 9

Return all of the safety gear to their proper storage locations.



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Grading Rubric

Below is an example of a rubric to implement when evaluating the performance of individual students for each of the laboratory exercises.

	Excellent 5 pts	Good 4 pts	Fair 3 pts	Poor 2 pts	Unacceptable 1 pts	Grade Received (N/A)
Ability to Follow Directions	Excellent Followed directions to the letter.	Good Followed directions.	Fair Moderately followed directions.	Poor Did not follow directions.	Unacceptable Did not appear concerned with directions.	Grade Received
Demonstrate Knowledge of Tools	Excellent Student knows and is able to identify and explain necessary tools for completion of the project.	Good Student is able to identify and explain necessary tools for completion of the project with some assistance.	Fair Student is unable to identify or use tools without major prompting.	Poor Student is not able to both identify and use tools.	Unacceptable Student's use of tools posed a danger to self and others.	Grade Received
Level of Needed Assistance	Excellent Student was able to complete the task without assistance.	Good Student was able to complete the task with little assistance.	Fair Student was able to complete the task with moderate assistance.	Poor Student was unable to complete task without major assistance.	Unacceptable Student was unable to complete task with assistance.	Grade Received





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	Excellent 5 pts	Good 4 pts	Fair 3 pts	Poor 2 pts	Unacceptable 1 pts	Grade Received (N/A)
Student Preparedness	Excellent Student had/gathered all materials and was completely ready to go to work.	Good Student had/gathered most materials and went to work.	Fair Student had/gathered most materials, however, they needed excess time to do so.	Poor Student did not have/gather some of the needed materials to perform work.	Unacceptable Student did not have/gather the needed materials and was unable to perform work.	Grade Received
Time Management	Excellent Routinely used time well throughout the project to get the job done on time.	Good Used time fairly well throughout the project.	Fair Procrastinated somewhat but did get the job done on time.	Poor Was unable to adequately meet timeline due to inability.	Unacceptable Did not meet timeline due to procrastination or wasting time.	Grade Received





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