Lesson: Safety at Work for Electrical Engineering Technicians

Read the following text about safety at work:

Electrical engineering technicians work with high-voltage systems, electrical equipment, and complex machinery. Due to the nature of their job, safety is of utmost importance. Working in an environment with electricity requires careful attention to avoid accidents or injuries. In this article, we will explore key safety precautions that every electrical technician should follow.

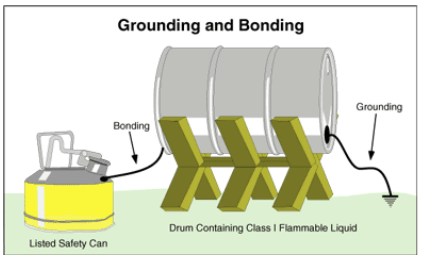
1. Use of Personal Protective Equipment (PPE)

Electrical technicians must wear the appropriate PPE to protect themselves from electrical hazards. This includes insulated gloves, safety glasses, and protective clothing. Insulated gloves prevent electrical shocks, while safety glasses protect eyes from flying debris or sparks. The right clothing ensures that workers are not exposed to electrical burns or other injuries.

2. Lockout/Tagout Procedures

Before working on electrical systems, technicians should follow lockout/tagout procedures. These procedures ensure that electrical circuits are de-energized, preventing accidental contact with live wires. A lockout device is placed on the power source, and a tag is attached to warn others that the system is being worked on. This reduces the risk of electrocution.
https://www.youtube.com/watch?v=5D4L9eWvg6c

3. Grounding and Bonding



Proper grounding and bonding of electrical systems is crucial to ensure the safe operation of electrical equipment. Grounding provides a safe path for electrical current to follow, while bonding connects various metal parts to prevent electric shock. All electrical systems must be grounded and bonded according to safety standards.

4. Risk Assessment

Before starting any electrical work, technicians should perform a risk assessment. This involves identifying potential hazards, evaluating the level of risk, and implementing measures to minimize these risks. A thorough risk assessment helps technicians understand the dangers they may face and prepares them to work safely.

5. Regular Inspections and Maintenance

Electrical systems should be regularly inspected to ensure they are in good working condition. Technicians must check for signs of wear, damaged insulation, or exposed wires. Regular maintenance helps prevent accidents and ensures that equipment is functioning safely.

By following these safety guidelines, electrical technicians can minimize the risk of accidents and injuries. It is essential that they remain vigilant and always prioritize safety while on the job.

https://www.eit.edu.au/electrical-engineering-practices-safety-guidelines/

Vocabulary Exercises

Exercise 1: Match the Word to the Definition

Match the words with their correct definitions.

1. **PPE**
2. **Lockout/Tagout**
3. **Grounding**
4. **Bonding**
5. **Risk Assessment**

A. A procedure to ensure electrical circuits are de-energized before working on them.

B. Protective clothing and equipment worn to avoid injury.

C. The practice of connecting electrical parts to prevent electric shock.

D. The process of evaluating hazards and deciding on safety measures.

E. Providing a safe path for electrical current to follow.

Exercise 2: Complete the sentences with the correct word from the box.

PPE - Lockout/Tagout - Bonding - Risk Assessment - Grounding

1. Before starting work on electrical equipment, a _____ should be done to identify potential hazards.
2. _____ is used to connect metal parts of an electrical system to prevent electric shock.
3. Electrical technicians must always wear _____ like gloves and safety glasses to protect themselves.
4. The _____ procedure ensures that the power is turned off and that the system is safe to work on.
5. _____ ensures that electrical systems have a safe path for current to flow and reduces the risk of electrical shock.

Exercise 3: True or False

Read the statements and decide if they are true or false.

	TRUE	FALSE
1. Electrical technicians do not need to wear personal protective equipment if the work is not dangerous.	_____	_____
2. Lockout/Tagout procedures help prevent electrical accidents by ensuring the circuit is de-energized.	_____	_____
3. Grounding and bonding are optional and not necessary for electrical safety.	_____	_____
4. A risk assessment is done to identify potential hazards before starting work on electrical systems.	_____	_____
5. Regular inspections and maintenance are not necessary for safe electrical work.	_____	_____