

CENTER: ICP POINT FORTIN
COURSE: ELECTRICAL INSTALLATION LEVEL # 1
INSTRUCTOR: MASLYN VERNE MENDEZ
TOPIC: ELECTRICAL SAFETY



ICE BREAKER

- ▶ <https://www.youtube.com/watch?v=kuDfDWUrEus>

LESSON OBJECTIVES

At the end of this unit, the students will be able to:

- **Identify what is a hazard.**
- **Respond to an electrical accident with 80% accuracy.**
- **Protect oneself from electrical injury, using the correct techniques.**
- **Identify what is power line safety.**

OBJECTIVES CONTINUED

- Describe safety priorities.
- List the types of electrical injuries

What does hazard mean?

Hazard means:

- ▶ any potential or actual threat to the well-being of people, machinery, or the environment.
- ▶ Electrical hazard safety means:
- ▶ Taking precautions to identify and control electrical hazards



(Paul Cao, 2025)

Why know about it?

Because failing to take the necessary precautions can lead to:

- ▶ injury or death
- ▶ fire or property damage.

WORKSHOP SAFETY

- ▶ **Workshop safety is the practice of protecting individuals, tools, and equipment from harm, accidents, or damage in a workspace through protocols like wearing Personal Protective Equipment (PPE), maintaining a clean environment, and using machinery correctly (Kelvin Mulwa, 2025).**

How do you respond to electrical incidents?

If you come across a person receiving an electric shock:

- ▶ If possible, disconnect the electrical supply (switch?)
- ▶ Assess the situation – never put yourself at risk
- ▶ Take precautions to protect yourself and anyone else in the vicinity



How do you respond to electrical incidents?

If you come across a person receiving an electric shock:

- ▶ Apply the first aid principles (e.g., DRSABCD)
- ▶ Assess the injuries and move the casualty to a safe area if required
- ▶ Administer first aid if trained
- ▶ Seek urgent medical attention



WHAT IS THE FIRST AID ACRONYM DRSABCD

- ▶ **Danger** – always check the danger to you, any bystanders and then the injured or ill person. Make sure you do not put yourself in danger when going to the assistance of another person.
- ▶ **Response** – is the person conscious? Do they respond when you talk to them, touch their hands or squeeze their shoulder?
- ▶ **Send for help** – call triple zero (000). Don't forget to answer the questions asked by the operator.
- ▶ **Airway** – Is the person's airway clear? Is the person breathing?

THE FIRST AID ACRONYM DRABCDCD CONTINUED

- ▶ **Breathing** – check for breathing by looking for chest movements (up and down). Listen by putting your ear near to their mouth and nose. Feel for breathing by putting your hand on the lower part of their chest.
- ▶ **CPR (cardiopulmonary resuscitation)** – if an adult is unconscious and not breathing, make sure they are flat on their back and then place the heel of one hand in the centre of their chest and your other hand on top.

THE FIRST AID ACRONYM DRABCDCD CONTINUED

- ▶ **Defibrillator** – for unconscious adults who are not breathing, apply an automated external defibrillator (AED) if one is available. They are available in many public places, clubs and organisations. An AED is a machine that delivers an electrical shock to cancel any irregular heart beat.

Do you want to be a victim?

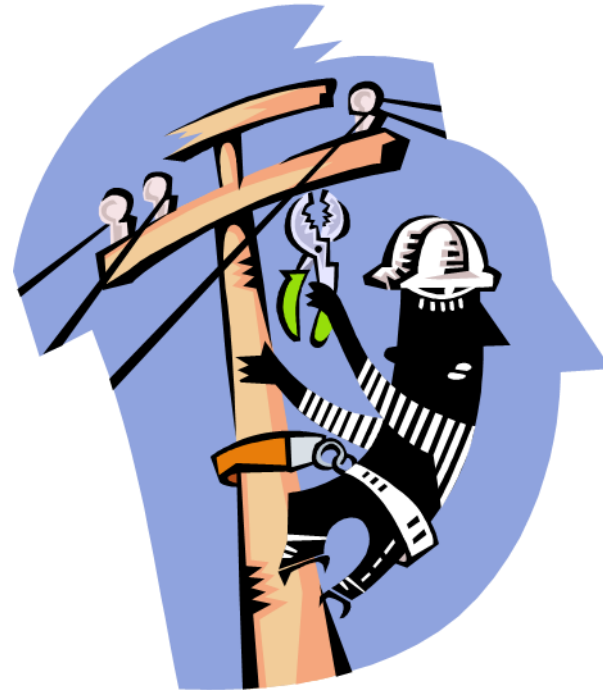
You could be the victim if you:

- ▶ Don't follow proper procedures around electricity
- ▶ Use electrical equipment improperly
- ▶ Use faulty electrical equipment



What are the types of injuries?

- Burns
- Shocks
- Falls



What should you do in an electrical emergency?

For low voltage electricity >50 V AC and 110 V DC

- ▶ Remove the source of the electricity supply
- ▶ Commence CPR if trained
- ▶ Call the emergency number on site

What should you do in an electrical emergency?

For high voltage electricity >1000 V

- ▶ **Call the emergency number for your site**
- ▶ **Don't go near the casualty**
- ▶ **Don't touch the casualty or try to free them with anything**

Should you report electrical incidents?

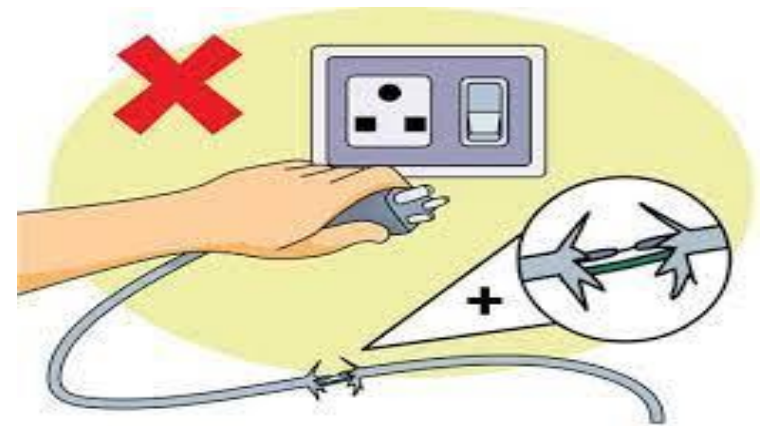
- ▶ Electricity is invisible – this in itself makes it dangerous
- ▶ It has great potential to seriously injure or kill
- ▶ The company has a duty of care to its employees and contractors
- ▶ Everyone is exposed to electrical hazards, not just electricians
- ▶ Report all electrical shocks and near misses

How to protect yourself from electricity?

- ▶ Don't wear metal objects
- ▶ Turn the power off
- ▶ Wear appropriate clothing
- ▶ Don't touch live parts
- ▶ Don't install or repair electrical equipment
- ▶ Use qualified personnel
- ▶ Clean and dry leads and plugs before use
- ▶ Use PPE

Other safety measures

- ▶ Heed warning signs
- ▶ Use the right equipment
- ▶ Study the operation manual
- ▶ Take care of extension leads
- ▶ Use only approved extension lamps
- ▶ Don't pull on leads
- ▶ Use residual current devices – RCDs
- ▶ Use the proper fuses and circuit breakers



Regular safety inspections

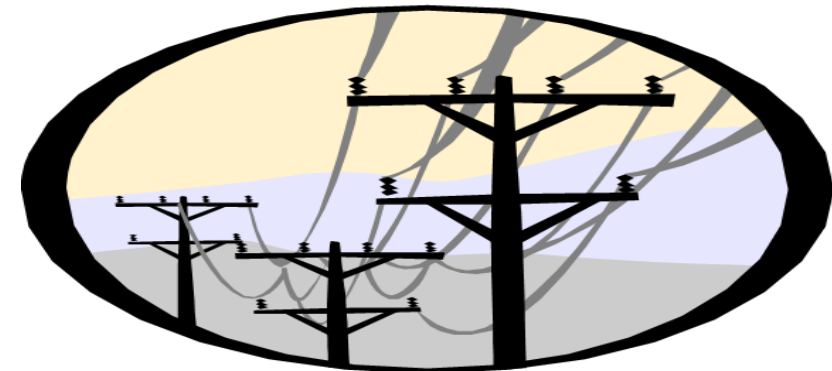
Routine safety inspections are a part of YOUR job.

- ▶ Electrical equipment should be checked each time before use for defects
- ▶ If not tagged or the tag is out of date, then report it and place it out of service



Be aware of power lines

- ▶ Do you know if there are overhead power lines on your site?
- ▶ Do you know where they are located?
- ▶ Do you know what the safe work clearance is?
- ▶ Strict regulations are laid down to cover any work that may have to be performed close to overhead power lines (Linja-Aho, 2023).



What is a power line corridor?

- ▶ MSI [Ministry of Health Service and Insurance] Regulation 5.28 defines a power line corridor as the area under any overhead power line that has not been properly isolated, and 10 metres on either side of the power line.
- ▶ These areas must be respected. They are there for the safety of everyone.

What is a power line corridor?

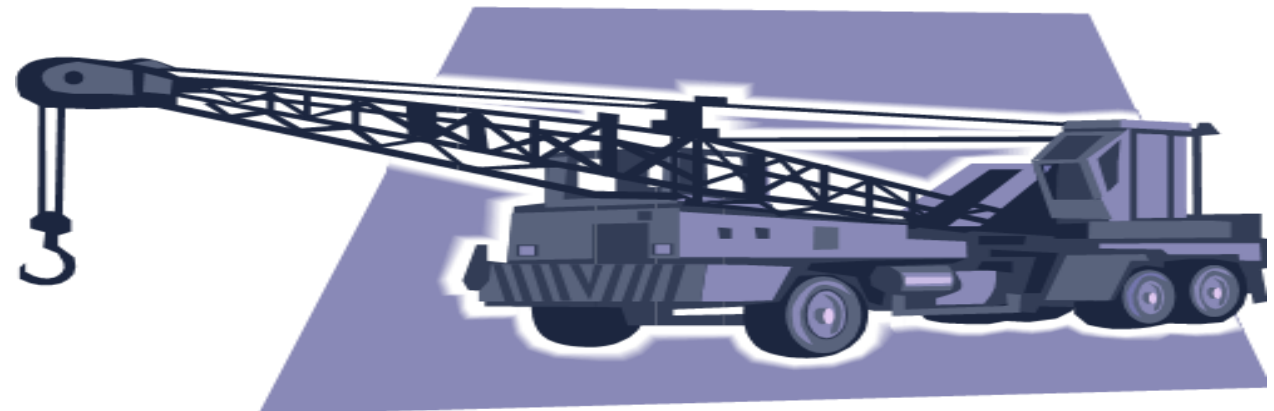
- ▶ Do not store equipment, machinery, or buildings or structures in power line corridors.
- ▶ Do not construct, fabricate, or maintain structures, buildings, machinery, or equipment in power line corridors.

LOOK UP AND LIVE

How Can a power line be approached safely?

Up to and including to 33 kV

- ▶ 2.3 m when passing underneath and 3 m when passing to the side
- ▶ Above 33 kV
- ▶ 4 m when passing underneath and 6 m when passing to the side



Who can access substations?

- ▶ Only trained and authorised personnel may enter and work inside a substation
- ▶ To enter a substation, you must complete the substation entry training
- ▶ Access is restricted for any cabinet with exposed energized parts

What are electric shock hazards?

Arc welding can and has killed people in high risk environments

- ▶ Everyone involved needs to better understand the hazards, adopt sound practice and use appropriate safety devices
- ▶ Study and adhere to the Code of Practice: WTIA Tech Note 7-04
- ▶ Use safety devices such as manual trigger switches and voltage reducing devices (VRDs)
- ▶ Under adverse conditions, strive to improve control measures (e.g. presence of moisture as sweat or rain).

Do you have permission to dig?

Be aware of the potential hazard from buried electrical cables for the following activities:

- ▶ excavation
- ▶ drilling
- ▶ trenching

Do you have permission to dig?

Be aware of the potential hazard from buried electrical cables for the following activities:

- ▶ levelling
- ▶ digging
- ▶ driving of stakes or pegs

Do not commence excavation work near buried cables unless a permit has been issued by an authorised person

Do you know what precautionary measures need to be taken?

THE KEY MESSAGES ARE

- ▶ The risk of electric shock from correctly installed and maintained power sources is negligible, provided that sensible precautions are taken by the operator and correct work procedures are followed
- ▶ Ensure that the right person is carrying out electrical work – licensed versus competent
- ▶ Electricity is essential but, improperly used, it can be DEADLY!





THANKS FOR
LISTENING..
ANY QUESTIONS?



REFERENCES

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