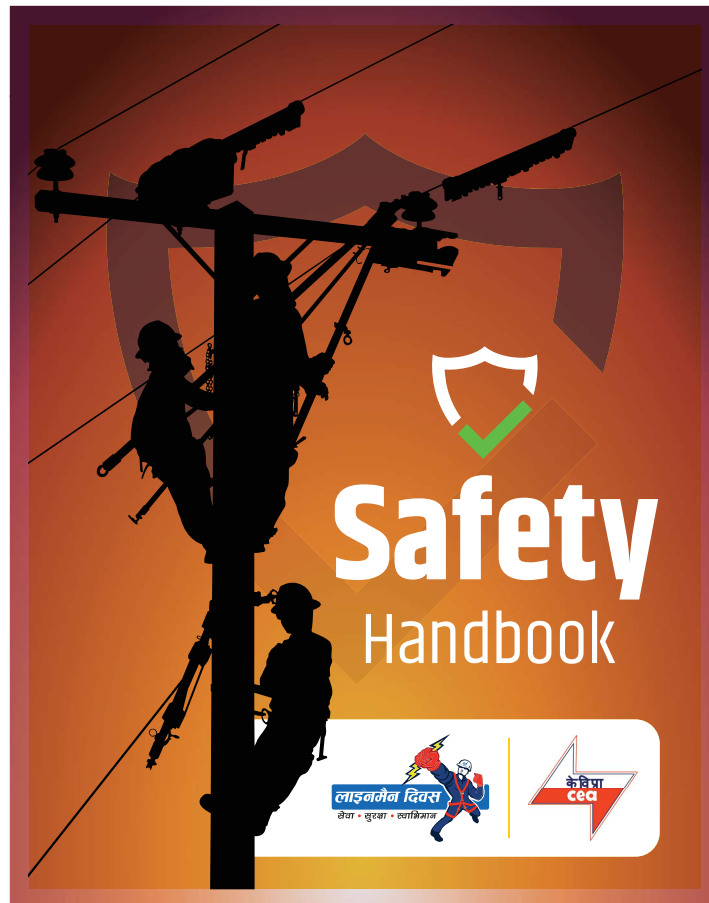






Mr Ghanshyam Prasad
Chairperson, CEA

Linepersons are the backbone of our power distribution system, working tirelessly to ensure reliable electricity supply across the nation. Their role is critical, demanding, and often undertaken in challenging conditions.

This Safety Pocket Handbook has been prepared as a practical guide to reinforce safe work practices and risk awareness. As it is released on the occasion of Lineman Diwas, I urge every lineperson to make safety a personal commitment - because every safe action protects a life.



Vijay Kumar Singh
Member (Power System)

Linepersons perform one of the most critical and high-risk functions in the power sector. Ensuring their safety is not merely a regulatory requirement but a shared responsibility of every utility and every individual.

This Safety Pocket Handbook provides essential guidance to promote safe working conditions and informed decision-making. I encourage all linepersons to use it as a constant companion in the field.



Golden Safety Rules



**AVOID OVERCONFIDENCE,
HASTINESS AND CARELESSNESS ETC.**

Check Personal Protective Equipment (PPE) & Tools

Ensure PPE & Tools are Checked

01



PPE is the key to safety

02

02

Personal Protective Equipment (PPE) first

Do not perform any task without proper Personal Protective Equipment (PPE)



03

Discuss Before Starting Work (Work Briefing)

Conduct a work briefing at the site. Discuss hazards and preventive measures, and assign tasks as per specialization of employees.



04

While operating a breaker/switch

PPEs including goggles should be used.





05

Conduct Job Safety Analysis

Start work only after doing a Job Safety Analysis (JSA)

Follow five steps to create security perimeter

Shutting down supply, Testing, Discharging, Shorting and Earthing, Establishing LOTO

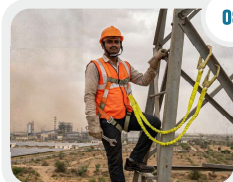
06



07

Test before touching

Consider all electrical equipment/networks as live until confirmed by testing



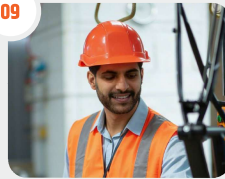
08

Maintain 3 POINT CONTACT
at height or use a FULL BODY
HARNESS with
DOUBLE LANYARD

Don't test your Luck

Do not take shortcut
(SOP/Guidelines) – Follow the SoP
and guidelines related to the work.

09



10

**Guide and promote ZERO
HARM CULTURE**

Presence and safety conversations by
officials (Leadership) during Site
Inspections, Lockout, Quick Isolation,
Safety Confirmation, Safety Briefings etc.

Occupational Health Check-ups

should be conducted at regular intervals, especially for personnel working at heights.



Remember,
Your family is waiting for you





Workplace Safety

✓ DO's

- Understand your job before you start work. The Supervisor is responsible to ensure the briefing is done before work begins.
- Always follow work instructions/operating procedures.
- Place safety tagging or other warning signs on the Main switch before starting work.
- Always assume a circuit as live until you prove it dead.
- Always operate Breaker/Switch while standing to the side.
- Completely discharge all cables/ equipments before working on them.
- Place rubber mats in front of all switch boards.
- Talk about safety at all times and work safely.
- Always follow the safety instructions given by the Authorized person or Supervisor.
- Report any Unsafe Situation/Unsafe Act immediately to the Authorized Officer or any other Officer.
- The ladder should be held firmly by the helper.

Use proper gear, safety is dear



⊗ Don'ts

- Do not work on electrical equipment unless you are authorized to do so.
- Do not operate without Personal Protective Equipment or PPE. Do not leave unwanted material/ scrap at your workplace after completing your work.
- Do not touch or tamper with any Electrical Equipment / Conductor, until you ensure that it is Dead or Earth.
- Do not work on any live circuit without the permission of Authorized personnel.
- Do not disconnect or disable the Earthing connection of any protective device available on Electrical Main or Equipment.
- Do not operate any Breaker / Switch slowly or hesitantly.
- Do not wear loose clothing, metallic watchbands, bracelets, amulets or rings while working on equipments.
- Do not touch any electrical system with your fingers or bare hands to check its status.
- Do not work on any poles or high grounds without a Full Body Harness and Rubber Gloves.
- Do not remove security tags or other signs.
- Do not disconnect the Plug by pulling on cable or if the switch is on.

Snake Bite Prevention

General Recommendations

01



Use a long stick when walking through tall grass or agricultural fields.

02

Wear Gumboots while working in waterlogged or dense forested areas.



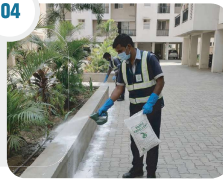
03



Always exercise extra caution when handling materials in store.

04

Building Owners must ensure regular spraying of snake repellent powder.



05



Field team should tap equipments like Distribution Transformer and Air Circuit Breaker with a stick before opening it.

06

Use torch while moving inside or around substations at night.





07

Working team must ensure complete Job Safety Analysis and identify the dangers before starting work.

08

Avoid creating habitats or suitable environments for snakes inside work or storage area.



09



Use leg guards during any fieldwork.



All employees are advised to follow the do's and don'ts given below in case of a snake bite.

✓ Do's

- Keep the person away from the snake to prevent another bite.
- Call 102 (Ambulance) and 112 as soon as possible.
- If possible, inform the hospital in advance so that Anti Venom can be kept ready.
- If possible, take a photo of the snake or note its color, shape and markings and keep this information ready to share with the doctor.
- Stay calm and take slow, deep breaths.
- Keep the bitten area below the heart level.
- Keep monitoring victim's vital signs (pulse, breathing, heart rate etc.).
- Keep the bitten area still and move it as little as possible.
- Clearly display information regarding snake safety on Boards/ Signage at Sub-stations/ Grids.
- If required, perform life-saving procedures (mouth-to-mouth breathing, CPR).
- Take the victim to the nearest medical facility (hospital) as soon as possible and make sure that Anti Snake Venom is available there.
- Display the contact of snake rescue team at important locations.

Don't delay, seek help right away _____

Don'ts

- Do not panic, stay calm and avoid spreading negative rumors.
- Do not bite or suck the bite area with your mouth.
- Do not cut the wound or try to remove the venom yourself.
- Do not tie a cloth, rope or band at the bite area.
- Do not let the victim sleep, keep talking to keep them awake.
- Do not take any medicine without doctor's advice.
- Do not try to catch or kill the snake.
- If you are alone, do not try to drive yourself to the hospital unless it is absolutely necessary.
- Do not do any heavy physical activity.
- Do not move the affected area, let it rest.
- Do not depend on superstitions, traditional treatments or local remedies.
- Do not give the victim anything to eat or drink.

Tie no knot, rush to hospital spot



Major Risks And Life Saving Rules - Electrical Work

✓ Do's

- Before starting work, thoroughly inspect the complete work area with the help of Job Safety Analysis checklist.
- Before use, properly inspect all Personal Protective Equipment (PPE) like safety helmet, electrical safety shoes, electrical hand gloves and face shield.
- Before use, check all tools and equipments used in electrical work for proper insulation and suitability.
- Before starting work, ensure checking all metal structures for leakage current.
- While working with electrical equipments, make sure to use the correct type of rated mat.
- To create a safety zone, make sure to follow the five steps mentioned:
 - a. Isolation
 - b. Locking and Tagging
 - c. Checking and Testing
 - d. Discharging
 - e. Shorting and Earthing
- Before starting excavation work, make sure to check for underground electrical lines.
- Do not consider any equipment as charged or live until it has been tested and confirmed with a testing device.





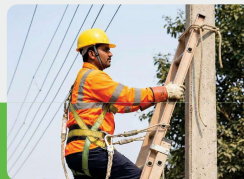
Don'ts

- Do not use non-insulated tools or equipments while working on a live line.
- Do not work on any line or charge equipment until all necessary PPE is confirmed available.
- If a pre-identified dangerous pole is found in the work area, the work should only be carried out under competent supervision.
- Do not perform any task or operation for which you are not authorized.
- Never use non-insulated or defective equipments near bus-bars, Air Circuit Breaker, Low Tension side, bare conductors or open cable joints.
- If the work is being done under shutdown, do not start work before creating a proper safety zone.
- Do not start excavation work until proper safety measures are implemented for the underground power lines.

Life Saving Rules Work at Height and Use of Ladder

✓ Do's

- Before starting work, check the locking arrangement of the extension ladder.
- Before starting work, check for possible damage, bends, loose steps and other parts of the ladder.
- Check ladder's rubber shoes for possible wear and tear.
- Check the ladder's edges for possible damages or cracks.
- Place the ladder at a 1:4 ratio and make sure the top part of the ladder is securely tied to a strong structure.
- Check the ladder for any missing rungs/ steps and never try to make any temporary arrangements.
- While climbing up or down a ladder, ensure that the helper is holding the ladder properly and that the top end of the ladder is securely tied.
- While climbing up or down a ladder, follow the "Three-Point Contact" principle.
- Check for separated or cracked edges of the ladder.



Tie your belt, safety felt



Don'ts

- Never work while standing on the top two steps of the ladder.
- Do not work on the ladder until the helper is holding it properly and the top of the ladder is firmly tied.
- Never lean beyond the sides of the ladder to work.
- Never work on a ladder with damaged, bent, loose steps or cracks on the edges.
- Do not work on a temporary or makeshift ladder.
- Do not climb on the ladder wearing slippery shoes and only one person should work on the ladder at a time.

Before you climb, check every time _____

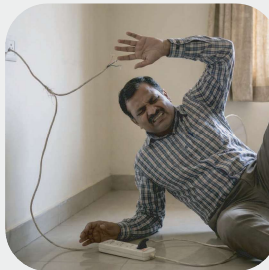
Shock Treatment Chart

ELECTRIC SHOCK & ITS MANAGEMENT

Coming in contact with high voltage wires



Coming in contact with low voltage open wires

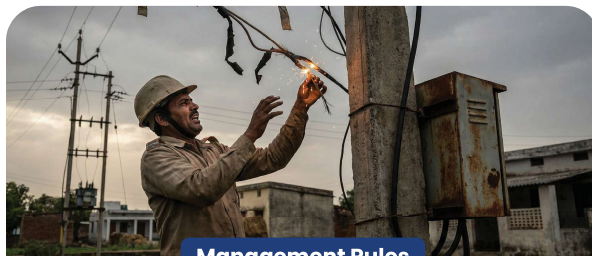


Effect

- Fatal Heart Attack
- Lung Paralysis, causing breathing to stop
- Burns: On the skin and/or inside the body



Electric shock due to faulty electrical connections and carelessness.



Management Rules

- **If possible, cut off the electrical supply or remove the plug wire.**
If coming in contact with low voltage open wires, stand on something like wood, a bundle of paper or rubber footstool.
- **Without touching the injured, cut off their contact with the electric wire.**
With high voltage wires, if possible, stay away from them as much as possible. Use non-conductive materials like rope, dry wood, dry cloth, etc.
- **Perform artificial breathing and give chest compressions.**
Release pressure from chest to allow air to go inside.
- **Do not give the injured anything to drink.**
Press on the chest to help air come out.
- **Call a doctor or take the injured to hospital.**



During bad weather (heavy rain, strong winds, lightning strikes or flood), working on electrical networks is very dangerous. In safety protocol, disconnecting the system and preventing employees from electric shocks is given priority, the chances of that increases due to moisture and water conductivity.

✓ Do's: Safety Practices

- Treat all wires as live: Consider every conductor, fallen wire or equipment as live.
- Shut off electricity first: Before starting any work, make sure power supply is shut down and it has been locked out (LOTO – Lock Out Tag Out).
- Use proper Personal Protective Equipment (PPE): Always wear rubber soled shoes, rubber gloves and insulated gear designed for electrical work.
- Keep the equipments dry: Cover tools, joints and open wires to keep them dry during repair.
- Check voltage: Use a non-contact voltage tester before touching the circuit.
- Check grounding: Make sure temporary earthing is properly connected before starting work.
- Wait for safe conditions: If there is lightning, stop work immediately and take shelter in a safe place.



⊗ Don'ts: Dangerous Actions

- Do not work in heavy rains: Avoid outdoor electric work during heavy rains.
- Do not touch wet electrical equipments: Never touch equipments, tools or switches with wet hands or while standing in water.
- Do not go near fallen electric wires: Stay at least 30 feet (10 meter) away from fallen electric wires as the nearby ground can carry current.
- Do not use metal ladders: Avoid using metal ladders near overhead wires during strong winds or rain.
- Do not work alone: Always work with a partner or supervisor for safety monitoring and emergency response.
- Do not use temporary wiring: Avoid temporary or makeshift work during stormy weather.
- Do not ignore Fuse/ Breaker: If a breaker trips, do not forcefully turn it back on immediately; it may indicate water related damage.

Emergency Measures

If a person comes in contact with a live electrical conductor, then do not touch them directly. If possible, turn off the main power supply; or else, use a non-conductive object (such as dry rope or wooden stick) to move the person away from the electrical source.

Stop, think, prevent a blink

Do's and Don'ts for Hotline Maintenance

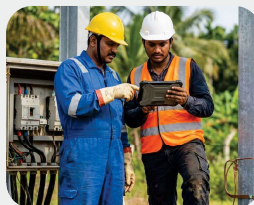
Do's

- Training of linemen shall be as per Regulations of CEA (Measures Relating to Safety and Electric Supply).
- Safe Working Distance shall be as per Schedule-I of CEA (Measures Relating to Safety and Electric Supply) Regulations, 2023.
- Conduct pre-job briefing/toolbox talk with the team.
- Ensure proper earthing, bonding, and outriggers fully extended.
- Use tested and approved insulated tools and equipment.
- Always wear complete PPE as desired.
- Maintain Minimum Approach Distance (MAD).
- Use insulating covers/barriers on adjacent live parts.
- Maintain clear communication between bucket operator and ground staff.
- Ensure 100 % compliance of Standard Operating Procedures.

Safe Working Distance

The following safe working distances shall be observed for hot line maintenance operations:

Phase to Phase (kV)	Safe Clearance (Metre)
11	0.61
33	0.71
66	0.91
110	1.02
132	1.07
220	1.52
400	2.13





⊗ Don'ts

- Do not operate during rain, lightning, or high wind conditions.
- Do not work without Permit to Work or proper approval.
- Do not use damaged insulated tools/vehicle or gloves.
- Do not exceed the rated capacity of the boom/bucket.
- Do not move vehicle with boom elevated.
- Do not bypass safety interlocks.
- Do not allow unauthorized persons near the work area.

