



Operational Alerts inform Signal Mutual Members of serious incidents within the Mutual that resulted in permanent disability, death, or a significant near miss. If you have similar operations, please share this Operational Alert and have a safety discussion with operation managers, supervisors, equipment operators, and all affected employees. It is imperative that management review their operational controls at all levels to mitigate similar hazardous conditions and/or acts.

INCIDENT: ELECTRICAL SHOCK INCIDENTS

SUMMARY OF RECENT INCIDENT

Electrical shocks continue as a numerous cause of accidents across our Membership. While most incidents are not severe, the high frequency and potential for high severity regarding electrical shocks warrant more careful risk reduction by ensuring operational maintenance, careful task preparation, and addressing human error traps associated with one another. Two recent fatalities that involve electrical shocks demonstrate the need to focus on this risk:

- An employee working on high-energy welding equipment which was not correctly grounded.
- An employee working in a tank with some wet areas in the bottom, with a lighting string that was not rated for use in a wet environment, which may have been the cause of a fatal shock.



We have seen other examples of shocks that resulted in employee injuries:

- Incorrect grounding to other equipment or conductive materials
- Welding with damp welding gloves
- Installing equipment near cables
- Contract with frayed wiring/insulation
- Contact with a light stringer
- Contact with energized cables in 440v box
- Operating a welding stinger
- 440v Arc at the cable connection
- Moving leads entangled with hoses
- Uninsulated tools within live electrical panel

COMMON ERROR TRAPS AND FACTORS INCLUDE

The physical environment allows for contact with potential electrical sources, misinterpretation of communication, distractions from the task, or missing the risk and urgency of the situation and ability to focus:

- Improper grounding
- Exposed energized breakers, cables, panels, parts, wires, or J-boxes.
- Improvised or incorrect wiring electrical installations.
- Faulty electrical equipment or deteriorated wiring.
- The work environment may be restrictive (limited working space), which increases the risk of encountering electrical shocks.



SIGNAL[®] OPERATIONAL ALERT

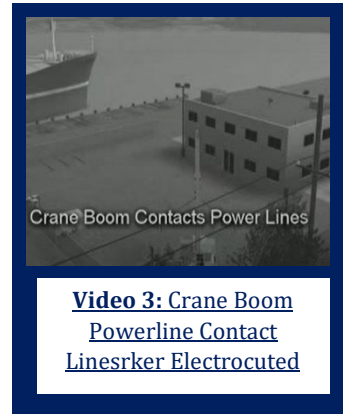


VAGUE OR INTERPRETIVE GUIDANCE allows for confusing or nonexistent task instructions allowing for actions to be taken based on “best guesses.”

- Electrical safety training
- Ineffective electrical safety pre-task inspections
- Lack of or inadequate PPE
- Lockout-Tagout programs are not properly implemented

ELIMINATING ELECTRICAL ERRORS

- Understand the work by conducting **pre-job briefs, task previews, and job site reviews** to evaluate the scope of actions, equipment, skills, and procedures needed at the job site with all workers involved. This will allow everyone to be mentally and physically prepared to perform the task correctly and as expected.
- Encourage **effective communication** with everyone involved with the work and promote all to speak up with concerns about safe actions needed to enhance awareness and teamwork.
- Reinforce safe work practices through **procedure use, self-checking, and peer checking** to ensure necessary steps are taken. If the employee observes inadequate wiring, potential contact with electrical boxes/wiring/etc., or other electrical hazard risks, **STOP** and address them before continuing the task.
- Use situational tools such as a **questioning attitude** to process and fully understand the “what-if scenarios.” **STOP** when you are unsure when there is confusion, vague instruction, and/or unfamiliar work involved.
- Instilling **place-keeping work processes** for keeping track of actions taken with physical markers, such as flagging de-energized circuits after properly testing for zero energy, eliminates risky behaviors and unknown conditions.
- **STOP** the task if any employees are unsure of the safety condition and ensure issues are resolved before proceeding with the work.
- Ensure and **enforce PPE** use, especially gloves and other non-conductive clothing.



MEDICAL ATTENTION

Any individual who receives an electrical shock of ANY voltage should seek medical attention quickly due to the risk of ventricular fibrillation.

REFERENCE GUIDE FOR EXECUTIVES

Please reference Signal’s 5-Key Elements for information on how to engage the workforce. Please contact your local Signal Safety Manager for more details.



Safety. Live It. Share It.

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