

# NRMCA Monthly Safety Initiative

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## Electrical Safety – It's Shocking!

### Electrical Safety at Ready Mixed Concrete Plants

All ready mixed concrete plants utilize electricity for a variety of reasons. Often electricity powers the plant, offices, laboratory, lighting, truck shop, equipment, machines, and much, much more. Electricity can also be carried to and throughout concrete plants by overhead or underground powerlines, extension cords, and generators. The use of electricity at concrete plants regularly means that employees, depending on the task, may work either directly or indirectly with electricity. According to the Occupational Safety and Health Administration (OSHA), electricity is recognized as a serious workplace hazard that can cause shocks, electrocution, burns, falls, fires, explosions, cardiac arrest and even death. Due to the use of, and reliance on electricity at concrete plants it's important to have a working knowledge of electricity, understand the electrical hazards that exist, and how to manage those hazards.

### What to Know About Electrical Safety

To understand electricity use, think about an electric switch like a water faucet. Behind the faucet or switch there must be a source of water or electricity with something to transport it, and with a force to make it flow. In the case of water, the source is a reservoir or pumping station; the transportation is through pipes; and the force to make it flow is provided by a pump. For electricity, the source is the power generating station; current travels through electric conductors (wires); and the force to make it flow - voltage, measured in volts, is provided by an electricity generator (substation, generator, etc.). Substances with very little resistance to the flow of electrical current are called conductors, such as metals. Substances with a high resistance that can be used to prevent the flow of electrical current are called insulators, such as glass, porcelain, rubber, plastic, and dry wood. If any piece of the process or material to conduct, carry or manage electricity fails, is not inspected or maintained, electrical accidents can happen. The severity of an electrical accident can be determined by the path of current through the body, amount of current, and the length of time the body is in the circuit. Electrical accidents, as per OSHA, largely occur due to three factors, "unsafe equipment or installation, unsafe environment, and unsafe work practices." These hazards can be prevented by using insulation, guarding, grounding, protective devices, and safe work practices. Safe work practices are often outlined through a company's safety and health program, lockout/tagout program, and likely task specific procedures.



### Electrical Safety Do's and Don'ts

- Think first, know the safety hazards at your work location
- Conduct an electrical hazard assessment of the plant to determine hazards, including an arc-flash survey
- Assume that all electrical wires are energized, and adhere to electrical signage
- Only authorized individuals should be allowed to work on plant electrical components
- Always practice Lock Out, Tag Out, Try Out (test), before working with or near electricity
- Always utilize established and safe work practices while working with electricity
- Always use the proper PPE and tools when working with electricity
- Never work with electricity in wet or damp conditions
- Use a qualified electrician for electrical work
- Exercise caution when working near electricity

### Resources

NRMCA: [Personal Protective Equipment \(PPE\) Program](#)

NRMCA: [Plant Safety](#)

OSHA: [Electrical Safety](#)

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