MNM Fatal 2014-15

- Electrical
- July 21, 2014 (South Carolina)
- Sand & Gravel Mine
- Assistant Plant Manager
- 28 years old
- 11 years of experience

Overview

The victim was killed when an aluminum boat he was riding in became stuck in shallow water on top of 480 volt energized power conductors. He paddled the boat approximately 300 feet from a dredge operating in a pond to reach the power conductors to move them away from the shoreline. The conductors had been installed from the motor control center along the bank of the pond, in the pond, and then to the dredge. The victim was electrocuted when he got out of the boat and attempted to pull it across the conductors. Sharp edges along the bottom of the aluminum boat penetrated the conductor's insulation.

The accident occurred due to management's failure to ensure that the individual power conductors supplying power to the dredge were provided with an outer jacket to protect them from mechanical damage, exposing miners to an electrical hazard. None of the persons at the mine were trained to perform electrical tasks. The victim had not received task training in the health and safety aspects of the task he was assigned, specifically working near energized conductors.

Root Causes

Root Cause: Management failed to ensure that the individual power conductors supplying power to the dredge were provided with an outer jacket to protect them from mechanical damage thereby exposing miners to an electrical hazard.

Corrective Action: Management discontinued using the dredge as a mining method. An open pit excavation system will now be used to mine the material. The dredge and the associated electrical conductors have been removed from service.

Root Cause: Management failed to task train any miners, including the victim, to perform electrical tasks.

Corrective Action: Management established safe operating procedures by hiring an electrical contractor trained and experienced in electrical work. All miners are trained on the new safe operating procedures.

Best Practices

- Establish and discuss safe work procedures before beginning work. Identify and control all hazards associated with the work to be performed and use methods to properly protect persons.
- Train all persons to understand the hazards associated with working near energized electrical conductors.
- De-energize power and ensure that the circuit is visibly open before working near energized conductors that may have damaged insulation.
- Lock and Tag! Place YOUR lock and tag on the disconnecting device.
- Use properly rated Personal Protective Equipment (PPE) including Arc Flash Protection such as a hood, gloves, shirt, and pants.
- Ensure electrical conductors are properly rated and designed for the applications used.
- Ensure that ground fault protection is provided to protect persons
- Ensure that all electrical systems are safely designed and properly installed.