SAFETY TOOLBOX TALK

Week XX: Electrical Safety

INCIDENT INFORMATION — *Why is it important to be safe around electricity?*

The electrical current in a regular business or home has enough power to cause death by electrocution.

- 9760 workers were injured and 739 died from exposure to electricity between 2012 and 2016.
- By occupation, workers in construction and extraction occupations (47%) and installation, maintenance, and repair occupations (22%) accounted for the largest number of deaths.
- 80% of fatal injuries from direct exposure to electricity occurred while workers were engaged in constructing, repairing, or cleaning activities. Workers who were fatally injured as a result of indirect exposure to electricity were most often engaged in construction, repairing, or cleaning activities (37%) or were using or operating tools or machinery (32%) at the time of injury. The four most common injuries that occur include electrocution, electric shock, burns and falls.

REPORTED CAUSES — *What are common causes of electricity related injuries?*

Direct contact with the electrical energy. When electricity travels through our bodies, it can interfere with the normal electrical signals between the brain and our muscles (e.g., heart may stop beating properly, breathing may stop, or muscles may spasm).

Indirect contact with the electrical energy. When electricity arcs through a gas, such as air, to a person who is grounded.

- Arc flashes result in intense heat causing burns, intense light which can cause blindness, or ignition of other materials.
- Arc blasts cause the same conditions as an arc flash, but are more intense and can include a strong pressure wave. These pressure waves can damage machinery, throw a person, collapse a lung or rupture ear drums.

Thermal burns include flash burns from heat generated by an electric arc and flame burns from materials that catch on fire from heating or ignition by electrical currents. High voltage contact burns can burn internal tissues while leaving only very small injuries on the outside of the skin.

Muscle contractions, or a startle reaction can cause a person to fall from a ladder, scaffold or aerial bucket. The fall can cause serious injuries or even death.

INJURY PREVENTION — *How do we avoid injury while working around electricity?*

1. INSPECT ALL ELECTRICAL CORDS AND PLUGS.

- Check power cords, extension cords, and plugs daily. Discard if worn or damaged. Have any cord that feels more than comfortably warm checked by an electrician.

2. ELIMINATE OVERLOADING A CIRCUIT.

- Do not plug several power cords into one outlet.
- Pull the plug, not the cord. Pulling the cord causes wear and may cause a shock.
- Do not use power strips for high amperage equipment or plug a power strip into another one to generate more receptacles

3. SIGNS OF AN ISSUE.

- Do not continue to use a breaker that continuously trips during normal operations. This could be a sign of a fault in the circuit and is a electrical shock or fire hazard.
- If a power cord, extension cord, or power box has exposed wire, remove from surface until item is fixed or replaced.