

Service Technicians Receive Electrical Burns When Electricity Arcs from Power Line to Boom Lift

INCIDENT FACTS

REPORT #: 71-192-2020s

REPORT DATE: March 2, 2020

INCIDENT DATE: August 2, 2019

VICTIMS: 33 and 48 years old

INDUSTRY: Hydraulic and industrial hose service

OCCUPATIONS: Service technicians

SCENE: Parking lot

EVENT TYPE: Electric current/power line



Two technicians servicing an articulating boom lift at a construction job site received electrical burns when electricity arced from a power line to the lift.

The incident happened in the parking lot of a distribution center under construction.

A construction contractor had rented the lift and found that it was not working due to a leak in its hydraulic line.

They contacted the rental company, which then contacted a hydraulic and industrial hose repair service. The repair service sent two experienced service technicians to repair the lift.

After they repaired the hydraulic line, they decided to test that the repair had been successful.

The technicians were focused on their task and did not notice the high voltage 69 kV power transmission line 36 feet above the ground overhead. The day was overcast with intermittent showers, which may have affected their ability to see the power line.

From the ground, one technician operated the lift's controls to elevate the boom. The other stood behind the lift to check for a hydraulic fluid leak.

As the technician raised the boom, it came near to the power line, but did not touch it.

Electrical current arced from the line to the lift basket's wet metal railing and traveled through the lift's frame into the parking lot asphalt where the technicians were standing.

The shirt of the technician standing behind the lift caught fire and he received electrical burn wounds to his upper body and left foot. The other technician received electrical burns to his fingers.

Both were hospitalized; one worker returned to work after several days, the other after several weeks.



Photo 1. Entrance location where electric current made contact on railing of boom lift basket after arcing from a power line.



Photo 2. Exit location of the electrical current as it made its way through the boom lift and made contact with the ground (see arrow). One of the technicians was standing in this area; the other technician was standing to the side of the lift.



Photo 3. Hole burned into asphalt by electrical current (circled).

INJURY NARRATIVE



Photo 4 and 5. Location of the technician as he was operating the boom controls to perform tests. The other technician was standing in front of the lift.

INJURY NARRATIVE

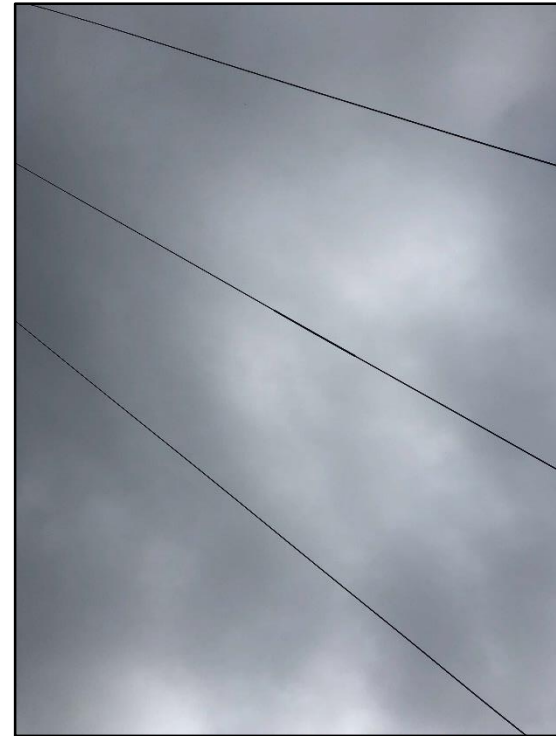


Photo 6 and 7. Views of the 69 kV power lines located over the parking lot.

Requirements

Employers must have the operator survey the area for hazards before using an aerial lift.

See [WAC 296-869-20035](#)

Requirements

Employers must ensure that operators maintain the minimum safe approach distance to energized power lines.

See [WAC 296-869-60035\(1\)\(f\)](#)

Voltage	Minimum Safe Approach Distance
Less than 300 volts (insulated lines)	3 feet (0.9 m)
Less than 300 volts (uninsulated lines)	10 feet (3.1 m)
300 volts to 50 kv	10 feet (3.1 m)
More than 50 kv	10 feet (3.1 m) + 0.4 inches (1.0 cm) for each 1 kv over 50 kv

Recommendations

Employers should train employees who operate aerial lifts:

- To recognize electrical hazards from overhead power lines.

Recommendations

Employers should train employees who operate aerial lifts:

- That electricity can arc, or jump, from a power line to an aerial lift without contact with the line. If any part of the lift gets too close to a power line, an arc can cause electrical current to energize the lift and run through it to the ground. This is especially true when a conductive object, such as a lift's boom or basket, is wet.

Recommendations

Employers should train employees who operate aerial lifts:

- To be aware that power lines can be difficult to see, and that judging their height from the ground can be difficult, especially on cloudy, showery days when there is low contrast.

Resources

Working too close to overhead power lines, Hazard Alert, WA
State Dept. of Labor & Industries.

<https://lni.wa.gov/safety-health/preventing-injuries-illnesses/hazardalerts/OverheadPowerLines.pdf>

This bulletin was developed to alert employers and employees of a serious traumatic injury of a worker in Washington State and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or conclusions regarding the cause of the injury.

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