

Case 84. 41-year-old male construction worker was electrocuted while guiding a metal culvert in a trench when the excavator made contact with a 7,200-volt overhead power line.

On September 23, 2004, a 41-year-old male construction worker died when he was electrocuted while working in a trench installing a sanitary sewer. The victim was part of a six-person crew. The crew had removed an existing catch basin and a 12-inch old metal culvert so they could install piping between two manholes, manhole A and manhole B. The crew had completed installing manhole B and related piping, and had partially back filled the trench to the grade of the old existing culvert. The culvert was rigged for lifting by using a slip hook wire rope sling that was attached to the open hook on the bucket of a Kobelco Mark SK 300LC excavator. The operator rotated the excavator 180 degrees from manhole B, picked up the old culvert and was spinning back 180 degrees to the hole that was prepared. The victim and coworker #1 were walking and guiding the culvert as the operator was swinging the load around to the east. Coworker #2 was in the west end of the trench near manhole B and was handed the culvert end. The victim then proceeded to access the east end of the trench near manhole B while coworker #3 continued to position the culvert. Coworker #1, holding the east end of the culvert, was pushing his end to the victim when the top of the excavator's boom either made contact with an energized 7200-volt overhead power line that was 24 feet 8 inches above the road surface or there was an arc from the power line to the boom. The electrical current traveled through the boom, the bucket attached to a metal cable, the metal cable attaching the bucket to the culvert, the culvert, and then into the people touching the culvert. The victim was fatally electrocuted, coworker #1 received a severe shock and coworker #2 was burned. Emergency response was called and the victim was pronounced dead at the scene.

MIOSHA issued the following Serious and Other citations to the employer:

Serious:

GENERAL RULES, PART 1, RULE 114(2)(b).

An accident prevention program shall, as a minimum, provide for the following:

Instruction to each employee regarding the operation procedures, hazards, and safeguards of tools and equipment when necessary to perform the job.

The company safety program does not provide adequate information and/or material relating to the hazards commonly associated with some of the company's major work operations. Hazards, such as but not limited to: the angle of repose, access to excavations, etc.

Serious:

LIFTING AND DIGGING EQUIPMENT, PART 10, RULE 1023a(1).

A crane, derrick, or excavation equipment shall not be operated closer to an exposed energized part than the clearances prescribed in Table 1, unless adequate clearance cannot be maintained.

The employer failed to maintain adequate clearance between the overhead distribution lines and the worksite excavator. Employees energized when contact was made with the 7,200-volt line and the excavator while resetting an old metal culvert.

Serious:

MOBILE EQUIPMENT, PART 13, RULE 1301 REF OSHA 1926.601(b)(8).
Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried.

No seats and/or seatbelts or other safety features used, employees were riding in the bed of an open pickup truck on their way to a local store for lunch items.

Other:

HANDLING AND STORAGE OF MATERIAL, PART 8, RULE 832(1).
Rigging equipment for material handling shall be inspected at the time of installation, before each job, and at the beginning of each shift if in use, by an employee qualified to perform this inspection. Defective rigging equipment shall be removed from service.

Defective hook, the forged hook had been welded onto the back of the excavator bucket for the purpose of hoisting and setting materials. The hook was not designed or intended by its manufacture to be welded.