

# SAFETY NOTES

Department of Consumer & Business Services  
Oregon Occupational Safety & Health Division  
Salem, OR 97310

## Fatality Report

Accident type ..... Electric shock  
Industry ..... Municipal water services  
Employee job title ..... City maintenance worker

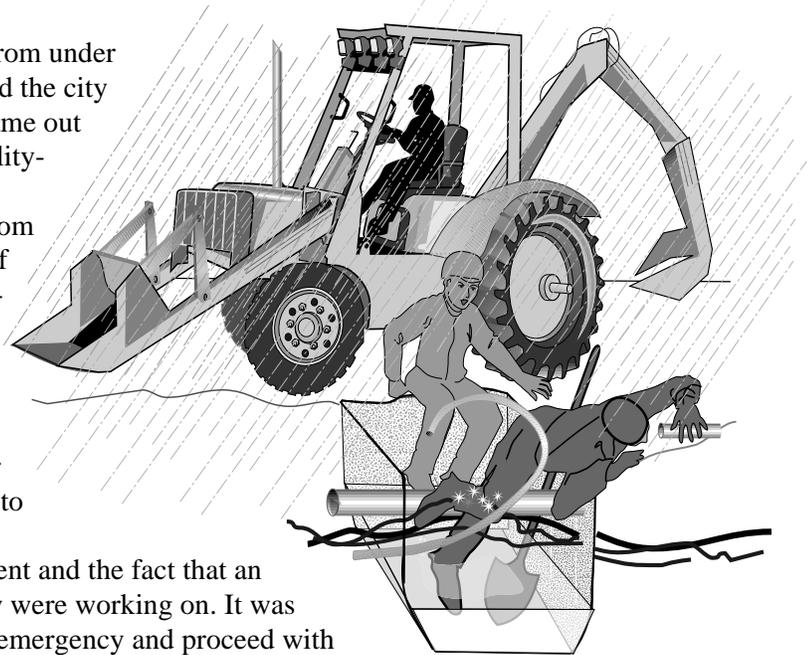
### Accident description

When a midnight stroller noticed water coming from under the asphalt in a small-town street, he called 911, and the city police called the city maintenance foreman, who came out in a downpour to investigate. He, in turn, called utility-company locators and two city employees. He instructed the employees to get repair equipment from the city maintenance shop and report to the scene of the leaking underground water main, which had begun leaking at the saddle connection at a rate of about 70-80 pounds per square inch (psi).

The foreman knew that there were underground electrical wires in the area and had been on hand when another city employee had been shocked four months before on this same water line. He stressed to the power company locator that he was concerned about precise locates because of the previous accident and the fact that an electrical transformer was located on the street they were working on. It was the foreman's decision to consider the situation an emergency and proceed with the repair, despite darkness, heavy rain, and saturated soil. The locator marked the curb with the approximate location of the electrical lines to within two feet and warned the foreman that they might find primary and secondary power lines running close to the water line. The power in the area was not cut off.

At about 3 a.m. the foreman instructed the two crew members to dig for the leaking main. At about 3:30, the locator was called to another site. The crew members uncovered three wires, later identified as 120-volt secondary power wires. When the crew members found the saddle and copper tubing and decided to replace it, they coupled new tubing to the old tubing and used the teeth of the bucket of a backhoe to "pull" the pipes through the meter box. The victim was standing in water in the trench without protective gear, holding onto the copper tubing when the coupling connecting the tubing cut into electrical wires in the trench and shocked the victim.

His co-worker jumped into the trench to help him and was also shocked and was unable to release or help the victim. The foreman then jumped into the trench and was shocked, but was able to get out. He used a wooden broom handle to push the employees free of the copper pipe. He dialed 911. Emergency technicians were unable to resuscitate the victim, who was declared dead at the hospital to which he was transported.



### Investigation findings

Investigators determined that the employer had failed to take all reasonable means to uncover and reroute or de-energize the electrical power at the excavation site and failed to provide employees adequate instruction in recognition and avoidance of underground electrical/water hazards.

### To prevent similar accidents

- Ensure employees are thoroughly trained and have the skills and equipment to do their jobs safely.
- Give safety the highest-possible priority when making decisions about expediency in dangerous situations.
- Train for appropriate procedures when electrical shock does occur: don't compound injuries and fatalities.

### Applicable standards

OAR 437-01-760(1)(b)(C)