

NATF Redacted Operating Experience Report

Electrical Contact Incident during Underground Cable Replacement

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Redacted operating experience reports are posted on the NATF public website to allow the NATF and its members to more broadly share information, especially safety-related alerts and learnings, with contractors and other utilities to benefit the industry at large.

The NATF member company that submitted the initial restricted distribution OE report for this topic/event has approved the NATF to issue this redacted OE report.

Open Distribution

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Topic

Electrical Contact Incident during Underground Cable Replacement

Description

A four-man crew was tasked with completing the replacement of a bad section of underground cable between a riser pole and a buried underground residential distribution (BURD) transformer. Two crews who had previously worked the job had removed the bad cable, installed generators that back-fed the transformers at two BURD transformer locations, and installed “dummy” elbows on primary bushings of the transformer. The crew installed a new primary riser at the pole and pulled new cable through and out of the first BURD transformer enclosure in preparation to terminate the end of the cable.

After completing that work, two linemen on the crew left for scheduled vacation. The foreman then requested two replacement linemen.

While waiting for the replacement linemen, the foreman and groundman remained at the job site and began to prepare the site for the replacement linemen by making up the elbow on the end of the cable that was laying outside of the transformer. After making up the elbow, the foreman began coiling new primary cable and determined he needed to climb inside the BURD transformer enclosure. He utilized a hot-stick to free the cable from the secondary conductors. While working from atop the transformer, the foreman made inadvertent electrical contact. He sustained significant burn injuries to his hand, arm, and leg. The foreman was eventually able to return to work.

Lessons Learned

This incident had two apparent causes and one contributing cause. Apparent cause 1 was the loss of focus on safe work practices; instead, the focus was placed on productivity. Apparent cause 2 was that the accepted work practice used did not mitigate the hazard. The contributing cause was the decision to continue working without waiting for the other linemen to arrive.

Other lessons included the following:

1. Make sure not to stand on energized equipment or cable while working in BURD transformer enclosures.
2. Consider the knowledge and experience of your crew. When job conditions change, stop, re-tailboard, and wait for all crew members before continuing work.
3. Ensure that everyone has responsibility to use the STOP work method.
4. Do not back feed a transformer if you don't have to.

Actions Taken

1. Implementing a job aid for connecting generators to BURD transformers that will eliminate the hazard when applicable.

2. Communicating the causes and key takeaways from this incident to field personnel, including contractors.
3. Incorporating a case study for this incident into new-hire lineman/groundman training.

Extent of Condition

Those most susceptible to injury from inadvertently making contact with energized equipment in BURD transformer enclosures are distribution field employees, grid operations troubleshooters, and contractors. This is because personnel in these job positions perform maintenance in BURD transformer enclosures, which requires connecting generators that may back-feed the equipment being worked on.

Associated Picture

