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Naval Facilities Engineering Command

Abstract of an Accident

97-3

ACCIDENT TYPE: Near - Electrocutation
INJURY: Potential Fatality
TYPE OF WORK: Excavation (Digging Foundation with Jack Hammer)
EQUIPMENT: 12 KV Concrete Ductbank

DESCRIPTION OF THE ACCIDENT:

A Navy civilian worker was chipping concrete with a jack hammer from what he mistakenly thought was a building foundation, but was actually a high voltage ductbank, when the tip penetrated the concrete and contacted a 12,000 Volt (12KV) conductor inside. Although the resulting significant electrical short and arc-blast did not injure the employee, the jack hammer was damaged and power to a large area of the facility was lost for approximately 12 hours.

DIRECT CAUSE:

Underground utility locator marks, identifying the ductbank before excavating, were removed during the first stages of the excavation work. No site drawings identifying the underground utilities were available for reference after locator marks were removed.

CONTRIBUTING CAUSES:

- Although locating and marking of underground utilities is universally required, there is no requirement that site sketches of the identified utilities be made and maintained for reference during excavation.
- No site specific safety training was conducted prior to digging to acquaint employees with local utilities and to prepare them for the hazards of digging into live utilities.

LESSONS LEARNED:

- Establish requirement for site sketches which identify location of underground utilities.
- Ensure sketches are retained for reference during excavation work.
- Ensure underground utilities, including concrete structures, are not dug/drilled/broken until tested safe to do so.
- Ensure employees are trained on safe digging practices and dangers of digging without identifying underground utilities.

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