

DISCLAIMER: These Standard Operating Procedures (SOP's) are for the exclusive use of Navy Public Works Center (PWC) Norfolk. They are promulgated as guidance for their NAVFAC Commands. If intended to be used by other activities, they must be tailored to each activity's particular requirements and must be reviewed/approved by the activity's safety professionals prior to use.

**NAVY PUBLIC WORKS CENTER
NORFOLK, VIRGINIA
UTILITIES DEPARTMENT**

STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS

**TITLE
SUBSTATION CABLE TRENCH ENTRY**

**PROCEDURE NUMBER
WC 622 HVE 002**

**DISTR:
601A
610
620
WC 622
WC 624**

SIGNED: _____ (DATE)

APPROVED: _____ (DATE)

SAFETY PROFESSIONAL: _____ (DATE)

MANAGEMENT OFFICIAL: _____ (DATE)

**DATE: _____ REVISION DATE: _____
SUBSTATION CABLE TRENCH ENTRY**

Purpose:

Steps necessary to enter, and work in, a substation cable trench.

Potential Energy Sources:

1. Energized 34.5 kv and 11.5 kv cables.

Tools and PPE:

Tools: Trench cover lifting device, trench access guard, Gas Free tester, and hand radio. PPE: Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, Class 2 rubber boots, hard hat, safety shoes, safety glasses, and back brace if required by back injury prevention and control program. The class of rubber gloves and sleeves will depend on the exposure voltage as per the following: Class 0 - up to 1,000 volts, Class 1 - up to 7,500 volts, Class 2 - up to 17,000 volts, Class 3 - up to 26,500 volts, Class 4 - up to 36,000 volts.

References:

1. PWC Occupational Safety and Health Program Manual, PWCNORVAINST 5100.33E
2. PWC Occupational Safety and Health Standard Operating Procedures For Confined Space Entry Program
3. Occupational Safety and Health Standards for General Industry (29 CFR PART 1910): Subpart I, Personnel Protective Equipment; Subpart R, Electrical Power Generation / Transmission / Distribution; Subpart S, Electrical; Subpart J, General Environmental Controls, 1910.146,(k),(3)
4. NFPA 70 E, Approach Distances To Exposed Energized Electrical Conductors and Circuit Parts
5. ANSI C2-1987, National Electrical Safety Code

Procedures:

1. Lift cable trench access cover. Personnel will wear safety shoes and work gloves. Use a proper lifting device or use proper bending and lifting techniques. Place an access guard over the opening.
2. Turn on the trench lights. Switch(s) is on substation AC power panel.
3. From above, visually inspect the trench ladder and the area around the ladder for obvious problems which are a safety hazard. Pump out water in trench if required, refer to attached Procedure for Dewatering Confined Spaces.

SUBSTATION CABLE TRENCH ENTRY

4. Have a Gas Free Qualified Person gas free the cable trench from above as per Confined Space Entry Program.

5. Establish an individual as a Top Watch.

6. The Gas Free Qualified Person will enter the trench and complete the gas free testing as per Confined Space Entry Program. The person entering the cable trench will wear Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, Class 2 rubber boots, hard hat, safety shoes, and safety glasses. The person in the trench will maintain constant communication with the top watch via hand radio.

7. Once the gas free test is complete the Gas Free Qualified Person will exit the trench and fill out the proper paper work as per Confined Space Entry Program. Place Gas Free certification ticket, yellow copy, at cable trench entrance. The trench is now certified acceptable for entrance.