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

REPAIR/REPLACE SUMP PUMP AND/OR SUMP PUMP CIRCUIT IN SUBSTATION CABLE TRENCH

PROCEDURE NUMBER

WC 622 HVE 025

DISTR:
Code 601C.3
Code 610.E1
Code 620
Code 622
Code 622.1

SIGNED:_____
(DATE)

APPROVED:_____
(DATE)

SAFETY PROFESSIONAL:_____
(DATE)

MANAGEMENT OFFICIAL:_____
(DATE)

DATE:_____ REVISION DATE:_____

REPAIR/REPLACE SUMP PUMP AND/OR SUMP PUMP CIRCUIT IN SUBSTATION CABLE TRENCH

Purpose:
Procedure to repair or replace a sump pump located in a substation cable trench.

Potential Energy Sources:
1. Energized 34.5 kv and 11.5 kv cables.
2. Sump Pump 208Y120 circuit.

Tools and PPE:
Tools: Assorted hand tools, multimeter voltage tester, and blast blankets. PPE: Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, 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
6. SOP WC 622 HVE 002, Substation Cable Trench Entry

Procedures:
1. Assess the condition of the cable trench entrance and lighting.

2. Prepare cable trench for entry as per SOP WC 622 HVE 002, Substation Cable Trench Entry. Note, the individual established as top watch during entry preparation will remain so or establish another for the repair.

3. Enter trench and proceed to sump pump area. Wear Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, 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.

4. Place blast blankets over all primary cables within 10 foot radius of sump pump/sump pump controls wearing the PPE per Step

3. The Nomex hood, insulating rubber gloves, and insulating rubber sleeves can be taken off once the blast blankets are in place.

5. Open, lock, and tag the sump pump electrical circuit as per SOP WC 622 HVE 013, Hazardous Energy Control(Lockout, Tagout). Wear Nomex coveralls, 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 during the repair work.

6. Repair or replace the sump pump and/or circuit. Wear PPE per Step 5.

7. Remove lock, and tag then close the sump pump electrical circuit as per SOP WC 622 HVE 013, Hazardous Energy Control(Lockout, Tagout). Wear PPE per Step 5.

8. Check that sump pump is operating correctly. Wear PPE per Step 5.

9. Restore PPE to include Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, rubber boots, hard hat, safety shoes, and safety glasses and then remove the blast blankets.

10. Exit the cable trench. Secure the access guard. Use a proper lifting device or use proper bending and lifting techniques to close the trench access covers. Personnel will wear work gloves and safety shoes.

11. Turn off the trench lights. Switch(s) is on substation AC power panel.