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NAVY PUBLIC WORKS CENTER
NORFOLK, VIRGINIA
UTILITIES DEPARTMENT

STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS

TITLE
SUBSTATION CABLE TRENCH INSPECTION

PROCEDURE NUMBER
WC 622 HVE 003

DISTR:
601A
610
620
WC 622

SIGNED: _____
(DATE)

APPROVED: _____
(DATE)

SAFETY PROFESSIONAL: _____
(DATE)

MANAGEMENT OFFICIAL: _____
(DATE)

DATE: _____ **REVISION DATE:** _____

SUBSTATION CABLE TRENCH INSPECTION

Purpose:

Substation cable trench maintenance inspection.

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, hand radio, and blast blankets. 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
6. SOP WC 622 HVE 002, Substation Cable Trench Entry

Procedures:

1. Prepare cable trench for entry as per SOP WC 622 HVE 002. Note the individual established as top watch will remain so or establish another for the inspection.
2. The person performing the trench inspection 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.

SUBSTATION CABLE TRENCH INSPECTION

3. Enter the trench. Walk the entire length of the cable trench visually inspecting the following:

- a) the trench's walls, floor, and ceiling
- b) the high voltage cables
- c) the cable racks
- d) lights, replace any burnt out ones

4. Inspect the sump pump and sump pump controls. Raise the float to verify the sump pump will cut on and will pump water. If the sump pump does not work troubleshoot to find the problem. Repair the problem if the task can be completed in less than one hour. Prior to troubleshooting, and possibly repairing, place blast blankets over all primary cables within 10 foot radius of sump pump/sump pump controls. The Nomex hood, insulating rubber gloves, and insulating rubber sleeves can be taken off once the blast blankets are in place. When working on the sump pump circuit and circuit equipment be sure that the circuit is deenergized and tagged out if necessary. When the troubleshooting/repairing is complete, put Nomex hood back on and remove blast blankets.

5. Inspect any grounding resistors located in the cable trench.

6. Note all discrepancies on the PM inspection form.

7. 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.

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