

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.

SOP FOR SHORE POWER LOCATION OF SHIP GROUNDS

Purpose:

PWC SOP for locating grounds called in by ships.

Potential Energy Sources:

480 volt shore power.

Tools and PPE:

Multi-meter, 1000 volt insulation resistance tester, hard hat, work gloves, electric safety shoes, Nomex coveralls.

References:

1. PWC Safety Manual.
2. NFPA 70E table A for approach distances.
3. OSHA 1910.333 safe working practices.

Procedure:

Note: Wear all PPE during this procedure. If opening or closing shore power breakers stand clear of receptacles while using the remote operator stations.

1. Determine the power source(vault) and all loads it feeds. (*Note some vaults feed two turtlebacks, other load examples are other ships, shacks, industrial user equipment, conveyors etc.*)
2. Close a spare breaker from the same power source and measure the voltage from each phase to ground. *Note if there is a grounded phase one phase to ground reading should be much lower than the other two phases and the other two phases should read approximately 450 volts phase to ground. If there is a grounded neutral on the transformer each phase to ground will be equal or within 2 volts.*
3. Isolate by opening all breakers from the turtleback which feed power to all other loads(ships and/or equipment) and check to see if there is still a ground.
4. If disconnecting the other loads did not clear the grounds then open the breakers feeding the ship which had the ground. Measure phase to ground voltage on the spare breaker.

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5. If there is still a ground on the vault then disconnect plugs and meggar all cables and plugs phase to phase and phase to ground. Use proper lifting techniques when removing plugs.