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 Title: **Ground Fault Testing**
SOP Number: **WC 675 10**

Written by: Ted Gibson & David Lane Date: 02/ 24/ 96.
Reviewed by: _____ Date: / / .
Approved by: _____ Date: / / .

Potential Energy Sources:
1. Electrical supply (120 Vac).

Tools Required: Hard hat, safety shoes, safety glasses, work gloves, flame retardant clothing, insulated tools, ground fault tester.

References:
1. OSHA 1910.147, The Control of Hazardous Energy (lockout/tagout).
2. PWC 5100.33E Chapter 24, Energy Control Sources.
3. OSHA 1910 Subpart I, Personal Protective Equipment (PPE).
4. PWC 5100.33E Chapter 20, Personal Protective Equipment (PPE).

Procedures:
1. Ensure proper PPE is worn [references (3) and (4)].
2. Test outlet used to power tester by plugging tester into the outlet and reading line voltage. Observe lamps on tester to verify outlet wiring is correct.
3. Verify equipment ground continuity and impedance using the following procedure.
3a. Plug tester into verified outlet or extension cord.
3b. Plug equipment under test into jack on the front panel of the tester.
3c. Press the tip of the tester probe firmly against metal surface of the equipment.
3d. Verify correct wiring of equipment by observing the lamps on the tester. If the equipment is not wired correctly, remove it from site and take it to the Electric Shop for repair.
3e. Verfiy proper ground impedance of equipment by pressing the Ground Test button and reading impedance. If the equipment has an impedance of one ohm or more, remove it from site and take it to the Electric Shop for repair.
4. Verify equipment leakage current using the following procedure.
4a. Plug tester into verified outlet or extension cord.
4b. Connect plug end of probe into receptacle on tester marked Leakage.
4c. Plug equipment under test into the adaptor. Verify the equipment is turned Off.
4d. Attach tip of probe to ground wire connector on the adaptor.
4e. Plug adaptor into verified outlet. Verify polarity of equipment and adaptor is correct.
4f. Press the Leakage Test button and record the reading. If necessary, change the meter scale by selecting either X1 or X10 using the range selector.
4g. Turn the equipment under test On. Repeat step 4f.
4h. Reverse equipment polarity by rotating adaptor 180 degrees.
4j. Repeat steps 4c through 4g.
4k. Remove the tip of probe from the adaptor ground wire connector and firmly press it against metel surface of the equipment.

4l. Repeat steps 4c through 4j eliminating step 4d.
4m. The following table should be used to evaluate the condition of the equipment.

Leakage	Condition	Suggested Action
< 1.5 mA	Safe	
Between 1.5 & 5 mA inclusive	Questionable	Repair or replace as soon as possible.
> 5 mA	Hazardous	Repair or replace immediately.

5. The following phasing tape will be used to indicate whether or not the equipment has been tested during the corresponding quarter.

Color Tape	Quarter of the Year
Yellow	First, 1 January to 31 March
Green	Second, 1 April to 30 June
Red	Third, 1 July to 30 September
Blue	Fourth, 1 October to 31 December