

4. With customer approval, perform operational test of the system including unit transfer and battery discharge.
5. Calibrate and record all electronics to system specifications.
6. Check or perform Engineering Field Change Notices (FCN) as necessary.
7. Measure and record all low-voltage power supply levels.
8. Record phase-to-phase input voltage and currents.
9. Review system performance with customer to address any questions and to schedule any repairs.
10. Check power capacitors for swelling or leaking oil (if applicable).
11. Check for DC capacitor vent caps that have extruded more than 1/8" (if applicable).
12. Measure and record harmonic trap filter currents (if applicable).

## **Battery Full Preventive Maintenance Service**

### ***Semi-Annual Service***

1. Inspect the appearance and cleanliness of the battery and the battery room. Clean normal cell top dirt accumulation (to be done only with battery off line).
2. Measure and record the total battery float voltage and charging current.
3. Measure and record overall AC ripple current.
4. Measure and record overall AC ripple voltage.
5. Visually inspect the jars and covers for cracks and leakage.
6. Visually inspect for evidence of corrosion.
7. Measure and record the ambient temperature.
8. Verify the condition of the ventilation equipment, if applicable.
9. Verify the integrity of the battery rack/cabinet.
10. Measure and record 100% of the cell temperatures.
11. Measure and record the float voltage of all cells.
12. Measure and record all internal impedance readings.
13. Provide a detailed written report noting any deficiencies and corrective action needed, taken and/or planned.

### ***Annual Service (includes the above, plus)***

1. Re-tighten all battery connections to the battery manufacturer's specifications, offline only.

## **Corrective Maintenance Performed as Required**

1. Refurbish cell connections as deemed necessary by the detailed inspection report.

## **ASSUMPTIONS AND CLARIFICATIONS**

Parts coverage excludes air filters, proactive full bank capacitor replacement and fan replacement.

Customer should check air filters monthly for cleanliness and replace as necessary.

Maintenance does not include System Control Cabinet, Power Tie, Breaker Cabinets, Load Bus Sync or Maintenance Bypass Cabinets.

All battery checks are recorded through the LDI reporting system. Only visual battery inspection and total battery voltages are to be recorded on the UPS E-form. The full battery maintenance inspection will be conducted through LDI.

## **CUSTOMER RESPONSIBILITIES**

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following: