

E73Guide ANNUAL Motor Generator

FREQUENCY: Annual

Application:

This PM guide applies to motor generator sets, built and tested for long trouble free service. This guide card applies to those systems which provide an alternate or emergency power supply in the event that commercial electrical service is lost. This alternate power supply is provided by a storage battery system, and the UPS system uses an inverter to convert DC to AC power.

Special Instructions:

1. Obtain and review manufacturer's instructions.
2. Review "as-built" electrical drawings for locations of connections and all major breakers.
3. Schedule PM for UPS and related components for the same date.
4. Check input power to main transfer switch before tripping in order to ensure availability of power to computer room when outside utility power is disconnected.
5. Make all adjustments in accordance with manufacturer's instructions.
6. All tests shall conform to the appropriate ASTM test procedure and the values used shall conform to the manufacturer's and ANSI standards specifications.
7. Schedule power transfer with operating personnel and agencies.
8. Review the Standard Operating Procedure for "Controlling Hazardous Energy Sources".
9. Utilize proper lockout/tagout procedures.

Checkpoints:

1. Check the Utility Voltages (Phase A, B & C), Record findings.
2. Check the utility current (Phase A, B, & C).
NOTE: Current should be balanced within: 10% Mod, 3 & 5; 5% Phasetronics & Vectrol. Record findings.
3. Start and operate system under load by shutting off main power to computer room.
4. Check DC Current (load, lag & battery), Record findings.
5. Check DC Float Voltage and battery ripple, Record findings.
6. Check Inverter output (Phase A, B & C), Record findings.
7. Check Generator output (Phase A, B, & C), Record findings.
8. Check Generator current (Phase A, B, & C), Record findings.
9. Check DC power supplies, Record findings.
10. Check 48 VDC E. S. M., Record findings.
11. Check C. B. drops (Utility & Parallel), 150MV MAXIMUM Record findings.
12. Check rectifier input, Record findings.
13. Check hall test point, Record findings.
14. Inspect all external and internal LED indicators before taking unit out of normal operation. Record readings.

E73Guide ANNUAL Motor Generator

15. Inspect for signs of overheating and loose or broken hardware.
16. Inspect all wiring for fraying, insulation deterioration, tightness, and kinks.
17. Inspect all terminal boards and terminals for loose or broken connections.
18. Check all gauges for correct calibrations with voltage input and output.
19. Inspect breaker and fuse connections throughout the system module. Record all discrepancies.
20. Lubricate all hinges and latches on equipment.
21. Use vacuum or dry compressed air to remove dust or any material that might cause shorts or arcing.
22. Inspect remote annunciator panels for loose connections. Tighten as needed.
23. Check key mechanism for proper operation.
24. Check interior and exterior for signs of damage and proper anchoring. Make necessary repairs as needed.
25. Check logic load (no load and full load).
26. Check bypass phase angle.
27. Perform visual or physical checks on the following components:
 - (1) Fans (Running)
 - (2) Breakers (Hot Spots)
 - (3) Bearings
 - (4) Filters (Cleaned/Replaced)
 - (5) Batteries
Water checked (within Hi-Low marks)
Straps checked (no corrosion)
Cell Voltages
28. Perform motor generator vibration tests (M/G 2 Mil. Maximum) and Pony Motor 3 Mil.).
29. Lubricate the coupling, bearings and pony motor.
30. Check belt tension and condition.
31. Check the condition of coupling seals and teeth.
32. Check power connections.
33. Check battery connections.
34. Remove tags/locks and return all circuits to normal service.

Tools & Materials:

1. Tool group B
2. Locks and tags
3. LED's
4. Vacuum or dry low pressure unit
5. Torque wrenches
6. Ladder
7. Appropriate Lubricants
8. Micro-ohmmeter
9. Megger