

Inspection, Testing and Maintenance For Emergency Electrical Power Supply

| | | | | |
|----------------------------------|---|--|----------------------------------|--|
| Service Company | Date of Service | Time | Last Service Date | |
| | Weekly <input type="checkbox"/> Annual <input type="checkbox"/> | Semiannual <input type="checkbox"/> Fifth year <input type="checkbox"/> | Monthly <input type="checkbox"/> | |
| | Fuel <input type="checkbox"/> Natural Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Gasoline <input type="checkbox"/> Lpg (gas) <input type="checkbox"/> Lpg-liquid | | | |
| Building Name: | Manufacturer: | | Model # | |
| Address: | Contact Person: | | Phone: Fax: | |
| City: Postal Code: | Owner: | | Phone: Fax: | |

Note: The emergency electrical power system shall be maintained as specified in the manufacturer’s manual of operating instructions, provided that the manual includes at least the items listed in Tables 2,3,4,5 & 6 of C282-00 Emergency Electrical Power Supply for Buildings.

“√” Yes - Satisfactory “X” Unsatisfactory (Explain “NO” answers in comments). “N/A” Not applicable

Table 2 - Weekly Inspections & Tests

1. Consumables

- _____ Inspect day Fuel tank level?
- _____ Inspect Lubricating oil level.
- _____ Inspect Engine coolant level?
- _____ Inspect engine , generator, fuel tanks and cooling system for leakage?
- _____ Inspect proper operation of fuel transfer pump ?

2. Starter System

Electric Starter: cleanliness, mounting, terminal security?

Air Starter:

- _____ Inspect air tanks for pressure?
- _____ Inspect valves for leakage?
- _____ Test auxiliary engine and compressor operation?
- _____ Bleed off condensation?

3. Batteries and charging equipment

- _____ Inspect battery electrolyte levels?
- _____ Test all battery cells for electrolyte -specific gravity?
- _____ Inspect electrical connections for tightness and corrosion?
- _____ Inspect cleanliness and dryness between terminals?
- _____ Inspect charger for electrical connections, clean & tight?
- _____ Test charger for operation of both float & equalizer modes?
- Float _____ VDC Equalize _____ VDC

4. Engine

- _____ Test lubricant and /or coolant heaters for operation?
- _____ Inspect governor control linkages and oil level?
- _____ Inspect fuel pump oil sump?
- _____ Inspect fan belts for correct tension and wear?

5. Control Panel

- _____ Inspect control panel check security ?
- _____ Test annunciator lamps to confirm they are operational?
- _____ Inspect control panel settings, ready for auto start up?
- _____ Test remote visual and audible trouble signals at FA panel?

6. Inspect air control louvre settings for operation?

Table 3 – Monthly Inspection, Test, and Maintenance

1. All items in table 2 plus the following

2. Test the entire system

- _____ Simulate failure of the normal electrical power supply
- _____ Operational Test conducted? (30% of the rated load for 60 min)
- _____ Operate all automatic transfer switches under load?

- _____ Inspect brush operation for sparking?
- _____ Inspect for bearing seal leakage?
- _____ Inspect for correct operation of all auxiliary equipment i.e. radiator shutter control, coolant pumps, fuel transfer pumps, oil coolers, room ventilation controls?
- _____ Record readings of all instruments & verify they are normal?
- _____ Drain exhaust condensation trap?

Table 4, Semi-annual Inspection, Test, and Maintenance

- _____ Inspect all items in Tables 2 and 3 plus the following?
- _____ Inspect and clean crank case breathers?
- _____ Inspect and clean all engine linkages?
- _____ Lubricate engine governor?
- _____ Test protective devices for proper operation?

Table 5, Annual Inspection, Test and Maintenance

- _____ **1. All items in Tables 2, 3, and 4 plus the following?**
- _____ **2. Prior to start up, perform one full crank cycle** as specified in Clauses 9.4.1. and 9.4.2. Near the end of the cycle (and while still cranking), measure and record the lowest indicated battery voltage. Voltage _____ VDC?

3. Control Panel

- _____ Inspect and tighten all electrical connections?
- _____ Test breakers for proper operation?
- _____ Clean insulators and bushings?
- _____ Test voltage regulator for proper operation?
- _____ Operate all moving parts to ensure that they move freely?
- _____ Clean and dress contacts as required?
- _____ Remove all dust?
- _____ Check gauge calibration?
- _____ With the gen set operating at full load conduct an infra red survey of all electrical connections to identify high-resistance connections? (see Clause 10.3)

4. Engine

- _____ Change fuel in fuel tank if used?
- _____ Change engine lubrication oil and filter?
- _____ Test strength of antifreeze _____ C?
- _____ Change fuel filters?
- _____ Inspect and clean exhaust system?
- _____ Clean and lubricate linkages?
- _____ Inspect air filters?
- _____ Inspect all mechanical connections?
- _____ Inspect all electrical connections?

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Table 5, Annual Inspection, Test and Maintenance continued.

5. Fuel Storage tank.

- Fuel maintained as per table 5.5?
- Fuel passes Clear and Bright visual test 10.5.5?

6. Generator

- Test surge suppressor & rotating rectifier on brushless unit
- Grease bearings (replaced old grease with new if applicable?)
- Clean commutator and slip rings if applicable?
- Clean rotor & stator windings using clean compressed air?
- Inspect coupling bolts and alignment?
- Inspect conduits for tightness?
- Inspect windings at rotor and stator slots?
- Inspect all electrical connections?
- With gen set operating at full load, conduct infrared survey of all electrical connections to identify high-resistance connections?

7. Transfer Switches

- Isolate transfer switch, open all inspection covers, and inspect all electrical connections?
- Operate all moving parts to ensure they move freely?
- Clean and dress contacts as required?
- Remove all dust?
- Clean and lubricate linkages?
- With gen set operating at full load, conduct infrared survey of all electrical connections to identify high-resistance connection?

8. Conduct 2h full load test (10.3)?

Table 6 Inspection, Test & Maintenance every 5 years.

1. Generator

- Inspect insulation of generator windings?

2. Engine

- Drain and flush cooling system. Refill with new coolant?
- Clean radiator tubes and cooling fins?

Note: For Inspection and Tests: All defects shall be corrected.

All inspections, tests and corrective actions shall be entered in the system log book. See 10.5.3

| Engine or Unit | Generator | No. 1 Transfer Switch | No. 2 Transfer Switch |
|----------------|----------------|----------------------------------|----------------------------------|
| Make: | Make: | Make: | Make: |
| Model: | Model: | Model: | Model: |
| Serial: | Serial: | Serial: | Serial: |
| Specs: | Volts: | Volts: Cont Volts: | Volts: Cont Volts: |
| | Amps: | Amps: | Amps: |
| | KW: | Draw #: | Draw #: |

| Engine | | | | | | | | Generator | | | | | | | | | |
|--------|-----------|-------------|-----|---------|------|----------|----|-----------|-------|----|----|------|----|--|----|----|---------|
| Time | Oil press | Temperature | | | | | | Batt Chg | Volts | | | Amps | | | Kw | HZ | |
| | | Water | Oil | Air Dis | Room | Out side | L1 | | L2 | L3 | L1 | L2 | L3 | | | | |
| | | | | | | | | | | | | | | | | | No load |
| | | | | | | | | | | | | | | | | | Em load |
| 5min | | | | | | | | | | | | | | | | | |
| 10min | | | | | | | | | | | | | | | | | |
| 15min | | | | | | | | | | | | | | | | | |
| 30min | | | | | | | | | | | | | | | | | |
| 45min | | | | | | | | | | | | | | | | | |
| 60min | | | | | | | | | | | | | | | | | |
| 75min | | | | | | | | | | | | | | | | | |
| 90min | | | | | | | | | | | | | | | | | |
| 105m | | | | | | | | | | | | | | | | | |
| 120m | | | | | | | | | | | | | | | | | |

| Shutdown Test | Oil Press | Hs Temp | O.S | U.S. | O.C. | O.V. | U.V. |
|------------------------|-----------|---------|-----|------|------|------|------|
| Operating Point | | | | | | | |
| Circuits | | | | | | | |

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| | |
|-------------|----------------------|
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|-------------|----------------------|

Comments:

I state that the information on this form is correct at the time and place of my inspection, and that all equipment was tested in conformance with applicable codes and the Manufacturers requirements and at this time was left in operational condition upon completion of this inspection except as noted in comments.

| | | | |
|------------------|------|------|---------------------------|
| | | | |
| Technician Stamp | Date | Time | Owner or Authorized Agent |