

# Inspection, Testing and Maintenance For Emergency Electrical Power Supply

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

**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?

## Inspection, Testing and Maintenance For Emergency Electrical Power Supply

Date	Building Name
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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
<b>Make:</b>	<b>Make:</b>	<b>Make:</b>	<b>Make:</b>
<b>Model:</b>	<b>Model:</b>	<b>Model:</b>	<b>Model:</b>
<b>Serial:</b>	<b>Serial:</b>	<b>Serial:</b>	<b>Serial:</b>
<b>Specs:</b>	<b>Volts:</b>	<b>Volts:</b> <b>Cont Volts:</b>	<b>Volts:</b> <b>Cont Volts:</b>
	<b>Amps:</b>	<b>Amps:</b>	<b>Amps:</b>
	<b>KW:</b>	<b>Draw #:</b>	<b>Draw #:</b>

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.
<b>Operating Point</b>							
<b>Circuits</b>							

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<b>Date</b>	<b>Building Name</b>
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**Comments:**

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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