

Emergency Generator Tip Sheet



An emergency generator is one of the more important and costly devices in a building's life. If correctly serviced and maintained, a back-up generator could conceivably last anywhere from 20-30 years. One way to extend the long life of your emergency generator is to establish a suitable preventative maintenance program.

While a maintenance schedule should be adapted to meet the specific demands of the building occupancy, the **CSA Standard C282-09** Emergency Electrical Power Supply for Buildings outlines a recommended approach for servicing and maintaining a back-up generator.

Here is a general overview of some of the CSA recommendations, which will help you extend the life of the emergency generator in your building. Semi-annual and annual inspections should be conducted by a qualified contractor.

Weekly Inspection: Testing and Maintenance requirements:

- Inspect all fuel, oil and coolant levels
- Visually inspect entire system for any leakages
- Inspect generator and starter for cleanliness
- Inspect all batteries and charging equipment

Monthly Inspection: Testing and Maintenance requirements:

Test and verify the entire system as follows:

- Simulate a failure of the normal electrical supply to the building
- Operate the system under at least 30% of the rated load for 60 minutes
- 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 (e.g. radiator shutter control, coolant pumps, fuel transfer pumps, oil coolers, and engine room ventilation system, etc.)
- Record the readings for ALL instruments in an Inspection, Testing and Maintenance log

Semi-annual Inspection: Testing and Maintenance requirements:

(to be carried out by a qualified contractor)

- Complete all inspection items from weekly and monthly checks.
- Inspect and clean engine crankcase
- Inspect and clean all engine linkages
- Lubricate engine governor and ventilation system
- Test protective devices for proper operation
- Inspect ventilation system belt(s)
- Correct any and all defects found during inspections and tests
- Record all inspections, tests and corrective actions in the log

Annual Inspection: Testing and Maintenance Requirements:

(to be carried out by a qualified contractor)

- Inspect and test all components in accordance with Table 5 in the **CSA Standard C282-09** Emergency Electrical Power Supply for Buildings.
- Change oil and filter
- Change fuel and air filters
- Change spark plugs
- Check coolant concentration
- Flush cooling system (as required)
- Fuel testing and reconditioning (diesel-fueled units only)
- Remove water from fuel tank (diesel-fueled units only)

The implementation of an Inspection, Testing and Maintenance log is important for any occupancy with a backup power generator. This log should be maintained in accordance with the manufacturer's operation manual and maintenance instructions. The log should be kept on site and include:

- The date on which any inspection, testing and maintenance exercise was carried out,
- The name(s) of the person(s) who performed the inspection, testing and maintenance,
- Notes on any unsatisfactory conditions observed or discovered and the steps taken to correct such conditions, and
- Copies of the design and installation performance test certificates.

For ease of use, the log book should be permanently placed on site, ideally in the emergency generator room. If the generator is kept outside the building, the log book should be kept in a safe location within the building.