

<b>The University of British Columbia Land and Building Services</b>		<b>Emergency Generators</b>	
<b>Policy &amp; Procedures</b>		<b>I-B-12</b>	
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		<b>Replaces:</b> NEW	

### 1.0 **PURPOSE:**

To ensure that emergency generators in University buildings are properly inspected, tested, maintained and used in accordance with applicable codes and regulations to ensure safe and effective operation when required.

Emergency generators form an integral part of fire life safety systems in University buildings. Inspection and testing requirements for emergency generators are governed under the legislated regulations of the BC Fire Code. Enforcement of the regulations is through the office of the BC Fire Commissioner with delegated authority in the case of the UBC Point Grey Campus to Vancouver Fire and Rescue Services. UBC Land and Building Services - Plant Operations has the due diligence responsibility for ensuring that all emergency generators in University facilities are tested and serviced in compliance with the regulations.

### 2.0 **POLICY:**

- 1) Emergency generators are to be used primarily for essential building systems (e.g. fire alarms, hallway lighting, ventilation systems) that ensure the safety of building occupants in the event of a power outage.
- 2) Critical computing, telecommunications and research equipment (e.g. -80C freezers) may also be connected to emergency power circuits provided that the addition of such equipment does not cause the total connected load to exceed 80% of the rated capacity of the emergency generator. The addition of loads with high in-rush current requirements may require the 80% maximum capacity limit to be lowered to maintain a reasonable margin of safety.
- 3) All emergency generators will be inspected, tested and maintained on a regular basis in conformance with BC Fire Code regulations.

### 3.0 **PROCEDURES:**

#### A. Inspection, Testing and Maintenance of Emergency Generators

To meet the regulations, emergency generators are inspected, tested and serviced on a daily, monthly, annual and five-year schedule as detailed below.

- i) Daily Inspections

All generators are inspected on a daily basis as part of Boiler and Pressure Vessel regulation compliance inspections. This is a visual check for obvious problems such as leaking fluids. All inspections are recorded and filed for due diligence.

ii) Monthly Inspections/Testing

All generators are inspected and tested monthly. The following specific tasks are performed:

- Check fluid and fuel
- Check starter system
- Check batteries and charging system
- Check engine
- Check air control louver settings
- Test the entire system. Operate the system at 30% of rated load for 60 min. Operate transfer switch under load.
- Record all instrument readings
- Make necessary repairs

iii) Annual Inspections/Service

Once a year, in addition to the tasks performed monthly, the following tasks are performed:

- Check battery cranking capacity
- Service all control panels
- Service engine
- Service generator
- Service transfer switch
- Test entire system. Operate for 2 hours at full load. Operate transfer switch under load.
- Clean/refresh fuel supply
- Record all instrument readings
- Make necessary repairs

iv) Five-Year Inspection and Service

Every 5 years the following tasks are performed:

- Inspect insulation of generator windings. Conduct Megger test.
- Drain and flush the engine cooling system
- Record all instrument readings
- Make necessary repairs

B. Connection of Additional Equipment to Emergency Generator

- i) Contact the Manager, Technical Services to obtain authorization for connection of any additional equipment or systems to the emergency power circuit. The decision on whether to allow additional connections will be at the sole professional discretion of the Manager, Technical Services.