PART 1 - DESIGN REQUIREMENTS

1.01 EMERGENCY SYSTEMS: All occupied buildings over 5,000 square feet shall be generator-equipped. Generator shall be a minimum of 25 kW and 125% of calculated load with a minimum of 12 hour fuel capacity at full load.

A. Provide separate services for each type of the following systems.

1.02 LEGALLY REQUIRED STANDBY SYSTEMS: The following items shall be connected to the generator set and a separate a separate Automatic Transfer Switch:

A. All emergency egress lighting.
B. All exit signs.
C. The Fire Alarm System.
D. The following items shall be connected to the generator set and a separate a separate Automatic Transfer Switch:
   1. Fire Pump.
E. Exhaust Fans in Laboratories deemed required for occupant safety and first responder safety.
F. Gas detection systems.

1.03 OPTIONAL STANDBY SYSTEMS:
A. All sump pumps.
B. All sewer ejector pumps, unless approval received from the University.
C. All heating system pumps and related control systems to maintain freeze protection for the entire building during power outages.
D. Other lighting requested by the University.

1.04 CRITICAL OPERATIONS POWER SYSTEMS:
A. Refrigeration and Freezers required to be kept operational during loss of power, to avoid loss of experiments or prevent hazardous conditions.
B. Receptacles for experiments and processes required to be kept operational during loss of power, to avoid loss of experiments exceeding $10,000 in value or prevent hazardous conditions.

1.05 OTHER REQUIREMENTS:
A. Use natural gas fired generators. Use of diesel fueled generators must be approved by Environmental Health and Safety.
B. Generators shall have auto exercise.
C. A full tank of fuel is required prior to University acceptance.
D. Provide UL 924 Switching devices where required.
E. Emergency lighting shall be required in Transformer Vaults, Electrical Rooms and
Elevator Machine Rooms.

F. Provide three (3) sets of keys for all control cabinets, generator enclosures to the University.

G. Minimize use of battery packs. Requires approval of Facilities Management. Battery Packs, when used, shall be 12 volt 50 watt minimum.

H. Approval from the University’s Employee Health and Safety department is required.

1.06 PREFERRED MANUFACTURERS

A. Generator Sets – Kohler, MTU, Onan

B. Transfer switches - ASCO, Zenith.

1.07 DO’S AND DON’TS:

A. DO’S:

1. **DO** Refer to SPCC requirements applicable to fuel tanks
2. **DO** Use single point inverter systems in buildings less than 5000 square feet
3. **DO** Provide keys to cabinets to University
4. **DO** Provide emergency lighting in all transformer vaults, switch gear rooms, and elevator machine rooms
5. **DO** Natural gas powered generators are preferred (underground storage tanks are not permitted)

B. DON’TS:

1. **DO NOT** Use battery pack self-contained LED or fluorescent fixtures
2. **DO NOT** Install self-powered radioactive exit signs under any circumstances

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