PHYSICAL FACILITIES
2015 Consultant’s Handbook
Division 26 ELECTRICAL
3300 ALTERNATE POWER SOURCES

1 Emergency Power Types

1.1 Battery Racks

1.1.1 It is rare that we use this type of alternate power source.

1.1.2 If the designer believes a rack of emergency batteries is the appropriate power source contact the PM to get written approval before proceeding.

1.2 Individual Battery Packs

1.2.1 In buildings that are not served by an emergency generator or central EMAC unit, emergency power for lighting may be provided via an individual battery pack (similar to the Bodine B50 ST).

1.2.2 The battery pack is to be integral to the fixture, and self-testing (monthly and yearly), with visual status indicator lamp, test switch, and audible alarm.

1.3 Remote Inverter

1.3.1 LED fixtures that are external to the building or are not able to employ individual battery packs may be powered from a remote inverter that has been approved by the fixture manufacturer as being compatible with the fixture.

1.3.2 A centralized system should be utilized and located in the main electrical room.

1.4 Generators

1.4.1 For most larger and all research buildings this is our first choice.

1.4.2 Generators are to be diesel powered with the skid mounted fuel tank under the generator. The tank should hold enough fuel for 24 hours of operation.

1.4.3 Each distinct emergency power system load (defined below) should have a separate automatic transfer switch.

2 System Classifications

2.1 Emergency Power Loads are defined as having power available within 10 seconds of the failure of the normal supply.

2.2 Standby Power Loads are defined as having power available within 60 seconds of the failure of the normal supply.

Note: Classifications are to be as outlined in the 2006 IBC and the Indiana Building Code

3 Items Considered Emergency Power Loads

3.1 The generator should be sized to carry at least the following items (emergency power loads):

- Emergency exit lighting (including exit signs and means of egress illumination)
- Emergency Voice/Alarm
  Communication Systems
- Fire Alarm and Automatic Fire Detection Systems
- Elevator car lighting in underground or high rise buildings
- Occupancies with highly toxic and toxic materials and those containing pyrophoric materials such as silane gas

3.2 Items Considered Standby Power Loads

- Smoke control systems
- Elevators (including accessible means of egress elevators)
- Fume hood exhausts and air handling units

Note: The goal is to operate these systems as necessary to prevent negative pressure situations or the accumulation of toxic fumes in buildings.

4 Additional Power System Information

4.1 In buildings equipped with a fire pump, the pump is to be connected to the building transformer prior to the main building disconnect through a separate transfer switch.

4.2 Any additional loads connected to the alternate power source should have a transfer switch separate from those listed above.

4.3 Supplementary information regarding emergency and standby loads is located in Chapter 27 of the International Building Code.

Note: A table summarizing that information is found at the end of this section.

5 Battery Pack Requirements

5.1 Units to be self-testing.

5.1.1 This includes every 30 days and once a year the unit is to do a complete test including a manufacture approved discharge test
that test the full functionality of the unit and its capacity to meet the 90 minute lighting capacity.

5.1.2 All testing is to be completely automatic including the annual test. Report of a test failure is to be both audible and visual.

5.2 Units are to maintain exit lighting for 90 minutes.
### 6 Table of Emergency and Standby Loads

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