

Electrical Energy Storage System Checklist

Stationary storage battery systems having capacities exceeding the system threshold in IRC and IFC chapters shall adhere to the following for criteria and design:

Construction Documents Required with Permit:

1. Location and layout diagram of the room in which the stationary storage battery system is to be installed.
2. Details on hourly fire-resistance-rated assemblies provided or required.
3. Quantities and types of storage batteries and systems.
4. Manufacturer's specifications, ratings, and listings of storage batteries and systems.
5. Details on energy management.
6. Location and content of signage.
7. Details on fire-extinguishing, smoke detection, and ventilation systems.
8. Rack arrangement load data.
9. Hazard mitigation analysis. This can include FMEA (failure mode effects analysis).

Hazard Mitigation Analysis Requirements with Permit:

1. Battery technologies not specifically identified in current codes.
2. More than one stationary storage battery if technology is located in a room or an indoor area where there is a potential for an adverse reaction between technologies.
3. Where allowed as a basis for increasing maximum allowable quantities in accordance with codes (including future installations or battery add-ons).

Fault Conditions:

The hazard mitigation analysis shall evaluate the consequences of the following failure modes and others necessary as described as single-failure modes.

1. Thermal runaway condition in a single-battery rack, module, or array.
2. Failure of any energy management system.
3. Failure of any required ventilation system.
4. Voltage surplus or surges on the primary supply.
5. Failure of smoke detection systems.
6. Short circuits and spill neutralization as tested.

Physical installations and room requirements will adhere to code requirements based on battery sizing and indoor vs. outdoor installations (ie: 5/8 gypsum on ceilings and walls in the room).