



Battery Energy Storage Systems (ESS)

FDNY Filing Procedures

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Battery ESS

Today we will discuss current FDNY Filing Procedures and Documents required when filing an application for a Battery Energy Storage System (ESS) to be installed within NYC

CUNY in conjunction with FDNY has drafted permitting process guidelines for Valve-Regulated Lead Acid (VRLA) (available online)

Other chemistries will follow similar procedure, but pertinent information will vary based on technology

Each application evaluated on site by site basis

Filing An Application

(can be submitted in parallel with DOB)



- TM-1 Application
- \$420 examination fee
- Plans Showing Proposed Location
- Narrative for scope of work
- Cut-sheets of system components
- Installation manuals
- UL Listings
- Other pertinent information



Review Process

1. Applicant submits all required paperwork
2. Once submitted, the application will be reviewed by FDNY
3. FDNY will contact the applicant to set up a joint site visit, conducted by Tech-Management and HazMat
4. FDNY will notify applicant of decision; if approved, a Letter of No Objection will be issued

Approval shall be obtained from NYC Department of Buildings (DOB) and all other agencies having jurisdiction

Information and supporting Documentation



These requirements are subject to change

Building Information

- Building Construction type (Non-Combustible)
- Building Use and Occupancy
- Description of where ESS will be located (indoor, outdoor etc.)
- Use of proposed ESS location (parking garage, etc.)
- Available FDNY access to ESS
- Description of Ventilation system for entire building and in direct vicinity of proposed ESS location

Information and supporting Documentation



Building Fire Protection Systems

- Description of water based suppression system, and for location of ESS (may require additional protection depending on technology)
- Standpipe hose outlet locations in close proximity to installation
- Emergency exit locations
- Fire hydrant locations

Information and supporting Documentation



ESS Description

- System size (kWh and KW)
- Applicable IEEE standards met
- Battery specific:
 - Number of Batteries
 - Chemistry
 - Voltage
 - UL Listings (UL 1973, UL 9540 etc.)
 - Cascading Protection

Information and supporting Documentation



- Battery Encasement:
 - Number and type of racks
 - Cabinet information (if provided)
 - Ventilation for off gassing (if required)
- Inverter:
 - Size
 - Type
 - UL Listing
 - Monitors for: over current, over temperature, etc.

Information and supporting Documentation



- Battery Management System (BMS):
 - Description of system
 - Monitors for: battery voltages, temperatures, current, etc.
- Safety measures:
 - Additional safety monitors not captured in the system description
 - Ex. Hydrogen sensors, ground fault protection, etc.
 - Sequence of events if malfunction happens at battery or system level
 - Explain how software detects malfunctions
 - Arc Fault Protection As per NEC 2014 (if used in conjunction with Solar PV array)

Information and supporting Documentation



- Process to shut down system
 - Rapid Shutdown As per NEC 2014 (if used in conjunction with Solar PV array)
 - Location of Rapid Shutdown Switch
 - Use of software to shut down
 - List who has access to these systems
 - Specify any existing dangers
 - Ex. Isolation of the system does not remove any charge present in the batteries.
- Commissioning and De-commissioning plan

Unit Contact Information



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Questions?