

# Siting Battery Energy Storage Systems Under the 2020 Fire Code of New York State



**NYSERDA**  
New York State Energy Research  
and Development Authority

Battery Energy Storage System Guidebook for Local Governments  
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# Background

In July 2024, Governor Hochul's Inter Agency Fire Safety Working Group (FSWG) released fifteen fire code recommendations to the New York State Fire Prevention and Building Code Council (Code Council) in response to energy storage fires at three sites in Summer 2023. These recommendations were designed to align the next iteration of New York's Uniform Fire Prevention and Building Code (Uniform Code) with best practices and updates to national standards made between code cycles, and incorporate lessons learned by the FSWG into the Fire Code of New York State (FCNYS) as part of the Uniform Code update.

NYSERDA's Clean Energy Siting team has been providing trainings to local authorities having jurisdiction (AHJs) on the current iteration of the fire code pertaining to battery energy storage systems (BESS), known as stationary energy storage systems in the code, since prior to the current code's adoption. Those regulations are based on the 2021 International Fire Code (IFC), and they are the most up-to-date regulations currently implemented in the United States.

The International Codes (I-Codes), including the IFC, are national standards on which New York's Uniform Code are based. Throughout 2023, 2024, and into 2025, the Code Council is updating New York's Uniform Code to align with the current I-Codes, updated in 2024 as part of a triennial update schedule. New York's FSWG analyzed draft versions of the updated standards, in addition to other national standards and best practices, to issue a series of draft fire code recommendations to the Code Council in early 2024.

The next iteration of the Uniform Code has an expected implementation timeline of mid-2025. In the months before the Uniform Code update, it is important that AHJs have a detailed understanding of the current regulations pertaining to BESS in New York, particularly those that are discretionary to the AHJ. This resource will emphasize critical regulations and authority given to AHJs under the 2020 FCNYS, which is the current regulatory framework for stationary energy storage systems.

## 1. 2020 Fire Code of New York State (FCNYS) Section 1206

### 1.1 1206.6 Large-scale fire test

**1206.6 Large scale fire test.** Where required elsewhere in Section 1206, large scale fire testing shall be conducted on a representative energy storage system in accordance with UL 9540A or approved equivalent. The testing shall be conducted or witnessed and reported by an approved testing laboratory and show that a fire involving one energy storage system will not propagate to an adjacent energy storage system. In addition, the testing shall demonstrate that, where the energy storage system is installed within a room, enclosed area or walk-in energy storage system unit, a fire will be contained within the room, enclosed area or walk-in energy storage system unit for a duration equal to the fire-resistance rating of the room assemblies as specified in Section 1206.14.4. The test report shall be provided to the fire code official for review and approval.

**Guidance for AHJs:** Generally, AHJs should expect to see UL 9540A reports for any project that exceeds 600 kWh capacity. It is important to understand that the UL 9540A test is not a pass/fail test. UL 9540A is a test method that yields data comprising a report that informs siting decisions for a particular battery energy storage system product (i.e., the specific equipment used for a particular project). The UL 9540A test is distinct from the UL 9540 equipment listing, which is a certification. The UL 9540A report should be reviewed and interpreted by the AHJ (or a peer reviewer on behalf of the AHJ) to make data-based decisions involving sections of the FCNYS that defer to results of large-scale fire testing.

### 1.2 1206.7 Fire remediation

**1206.7 Fire remediation.** Where a fire or other event has damaged the energy storage system, the system owner, agent, or lessee shall, at their expense, comply with Sections 1206.7.1 and 1206.7.2, or remove damaged equipment from the premises to a safe location.

**1206.7.1 Fire mitigation personnel.** Where, required by the fire code official, the system owner, agent or lessee shall, at their expense, immediately dispatch one or more fire mitigation personnel to the premises. The personnel shall remain on duty continuously after the fire department leaves the premises and until the damaged energy storage system equipment is removed from the premises, or earlier if the fire code official indicates the public safety hazard has been abated.

**1206.7.2 Duties.** On-duty fire mitigation personnel shall have the following responsibilities:

1. Keep diligent watch for fires, obstructions to means of egress, and other hazards.
2. Immediately contact the fire department if their assistance is needed to mitigate any hazards or extinguish fires.
3. Take prompt measures for remediation of hazards in accordance with the decommissioning plan in Section 1206.9.3.
4. Take prompt measures to assist in evacuation from the structures.

**Guidance for AHJs:** Local fire departments in New York and across the country have expressed concern about the duration of BESS fires relative to the bandwidth and training of local emergency response personnel. Section 1206.7 of the FCNYS was designed to address these concerns, providing for industry-funded fire mitigation personnel to perform hazard support and fire watch capabilities in conjunction with local first responders. AHJs concerned with local emergency response capabilities should seek to ensure that appropriate fire remediation personnel are contracted by the project developer in accordance with the fire remediation requirements in FCNYS prior to issuing a permit.

### **1.3 1206.8 Peer review**

**1206.8 Peer review.** Where required by the Authority Having Jurisdiction, the owner or the owner's authorized agent shall be responsible for retaining and furnishing the services of a registered design professional or special expert, who will perform as a peer reviewer, subject to the approval of the fire code official.

**1206.8.1 Costs.** The costs of special services, where required by the Authority Having Jurisdiction, shall be borne by the owner or the owner's authorized agent.

**1206.8.2 Special expert.** Where the scope of work is limited or focused in an area that does not require the services of a registered design professional or the special knowledge and skills associated with the practice of architecture or engineering, an approved special expert may be employed by the owner or the owner's authorized agent as the person in responsible charge of the limited or focused activity.

1. Scope of work. The scope of work of a special expert shall be limited to the area of expertise as demonstrated in the documentation submitted to the fire code official for review and approval.
2. Special expert qualifications. Special experts are those individuals who possess the following qualifications:
  1. Has credentials of education and experience in an area of practice that is needed to evaluate risks and safe operations associated with the design, operation and special hazards of energy storage systems.
  2. Licensing or registration, when required by any other applicable statute, regulation, or local law or ordinance.

**Guidance for AHJs:** Peer review is a key discretionary power provided to AHJs by the 2020 FCNYS. AHJs have the authority to require project developers to provide a third-party peer reviewer to review designs and relevant documentation pertaining to both the project and the equipment used for the project (e.g. UL 9540A report, Hazard Mitigation Analysis, etc.). This code provision allows jurisdictions that may not have encountered BESS development to leverage qualified experts to ensure compliance with codes, standards, and manufacturer specifications. NYSERDA will begin conducting peer reviews on all projects exceeding 600 kWh capacity beginning in early 2025. In the meantime, the Inter Agency Fire Safety Working Group recommends that AHJs require a peer review for every project exceeding 600 kWh capacity, every time.

### **1.4 1206.9.1 Commissioning**

**1206.9.1 Commissioning.** Energy storage system commissioning of newly installed energy storage systems, and existing energy storage systems that have been retrofitted, replaced or previously decommissioned and are returning to service, shall be conducted prior to the energy storage system being placed in service, in accordance with a commissioning plan that has been approved prior to initiating commissioning. The commissioning plan shall include the following:

1. Identification and documentation of personnel who are qualified to service, maintain and decommission the energy storage system, and respond to incidents involving the energy storage system, including documentation that such service has been contracted for.

**Guidance for AHJs:** The commissioning section of the 2020 FCNYS lists 12 requirements for a commissioning plan. The 11th requirement is critical, particularly where fire remediation may be a significant issue in a jurisdiction. AHJs should check to ensure that project developers have provided proof of personnel who are qualified to decommission and respond to incidents involving the BESS. Developers should provide information relevant to these qualified representatives prior to the AHJ issuing a permit for the system.

## 1.5 1206.10.1 Energy storage system listings

1206.10.1 Energy storage system listings. Energy storage systems shall be listed in accordance with UL 9540 or approved equivalent.

**Guidance for AHJs:** All BESS projects subject to the 2020 FCNYS must provide their UL 9540 equipment listing to the AHJ. The UL 9540 listing ensures that all components of the BESS work safely in harmony together. Unlike the UL 9540A test, the UL 9540 equipment listing is a pass/fail certification that applies to a specific energy storage system product. BESS products that achieved UL 9540 certification after the 9540 Ed. 2 was released in early 2020 will have been subject to UL 9540A large-scale fire testing. The UL 9540 certification does not mean that the UL 9540A test results no longer need to be reviewed, as the data from the test is meant to be interpreted by AHJs (or peer reviewers on their behalf) to make informed siting decisions. The UL 9540 equipment listing is a critical component of system safety. AHJs should not only ensure that projects use UL 9540-listed equipment, but project inspections should confirm that all the components of the equipment used in the project is consistent with the UL 9540 listing.

# 2. Additional Considerations for Local Ordinances

## 2.1 Signage Requirements

**Inter-Agency Fire Safety Working Group Recommendation:** Extend safety signage requirements beyond the BESS unit itself to include perimeter fences or security barriers and include a map of the site, BESS enclosures, and associated equipment.

**Guidance for AHJs:** Local governments can make enhanced signage a requirement for Site Plan Review in the interim period before the next Uniform Code update. It is critical that this information be accessible outside the fence line of the project for the health and safety of first responders. All relevant hazard warnings indicated on signage or maps should identify and display isolation distances response personnel should maintain from BESS involved in fire or where there may be a risk of explosion or deflagration.

## 2.2 Emergency Response Plans and Regular Fire Department Training

**Inter-Agency Fire Safety Working Group Recommendation:** Include a requirement for an Emergency Response Plan (ERP) and annual local first responder training for every BESS installation.

**Guidance for AHJs:** Local governments can make emergency response plans and training a requirement for Site Plan Review in the interim period before the next Uniform Code update. Existing standards such as fire safety plans in FCNYS Section 403 and 2023 NFPA 855 Section 4.3.2.1 address emergency operations for facility personnel, these standards are not specifically written for first responders. There should be a requirement for emergency response protocols specifically addressing the needs of first responders in the event of a fire, like 2023 NFPA 855 Appendix G.11.2. Appendix G.11.2 is supplemental information rather than a direct part of standard itself. The working group also recommends requiring site-specific training to be provided for local fire departments to familiarize them with the project, hazards associated with BESS, and procedures outlined in the ERP. Similar to peer review mentioned above, NYSERDA will be requiring that industry provide emergency response plans and offer local fire department training through incentive program rules starting in early 2025.

# 3. Conclusion

Local governments have a significant degree of local discretion and authority in ensuring that the hazards associated with battery energy storage systems are mitigated to the fullest extent possible. By following this guide, AHJs will position their communities to ensure safe, responsible BESS development in the interim period before the next iteration of the Uniform Code goes into effect. Following these steps will help New York meet its ambitious climate goals without delaying projects that are critical to establishing the reliability and resilience of our clean electric grid.