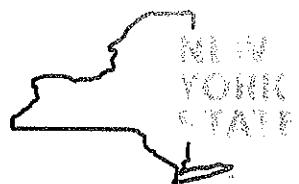


**NEW YORK STATE  
INTER AGENCY  
FIRE SAFETY  
WORKING GROUP**

**FIRE CODE  
RECOMMENDATIONS**



## BACKGROUND AND SCOPE

Following a series of fires at three battery energy storage system (BESS) locations across New York State in 2023, Governor Hochul convened an inter-agency Fire Safety Working Group (WG) to address safety concerns around lithium-ion BESS.

**The WG consists of state agency officials from:**

- Division of Homeland Security and Emergency Services
- Office of Fire Prevention and Control,
- New York State Energy Research and Development Authority (NYSERDA),
- New York State Department of Environmental Conservation,
- Department of Public Service, and the
- Department of State and nation-leading BESS safety industry experts, such as national labs and highly specialized professional energy storage consultants.

**The WG was formed with the following objectives:**

- Investigating the recent fires
- Inspecting current installations
- Identifying gaps in codes and industry best practices
- Developing recommendations for the New York State Fire Prevention and Building Code Council (Code Council) for revisions and enhancements to the Fire Code of New York State (FCNYS or Fire Code).

### **New York State Fire Prevention and Building Code Council (Code Council)**

The Code Council is the entity responsible for adopting The New York State Uniform Fire Prevention and Building Code (Uniform Code), which is adapted from the International Codes (I-Codes) produced by the International Code Council (ICC). The Code Council is comprised of 17 members appointed by the Governor and has members representing architects, engineers, builders, trade unions, persons with disabilities, code enforcement, fire prevention, varying levels of government, the State Fire Administrator, and the Secretary of State.

The Uniform Code prescribes the minimum standards for construction in New York and includes, among other code books, the FCNYS. It is applicable in every part of the state except for New York City, which is currently permitted to retain its own code.<sup>1</sup> Further, the Uniform Code applies in all jurisdictions without the need for local adoption. The draft recommendations in this memo are intended for the Code Council's consideration as part of the pending Uniform Code update. Interested stakeholders are encouraged to submit comments on the proposed recommendations to the Working Group for incorporation into the final version of this document, which will be submitted to the Code Council.

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<sup>1</sup> See Executive Law §383, New York State Senate website <https://www.nysenate.gov/legislation/laws/EXC/383>

## New York State BESS Safety Efforts

Only a few years ago, codes and standards governing lithium-ion BESS safety were in their adolescent stage and contained only limited requirements for these systems. In July 2019, following several BESS failures across the globe, New York State was the first state to adopt language from the draft 2021 International Fire Code (IFC) Section 1207 Electrical Energy Storage Systems, which provided more detailed regulations for lithium-ion batteries than the previous editions of the Fire Code.<sup>2</sup> These 2019 amendments were then integrated into the current 2020 FCNYS Section 1206, incorporating changes made to the draft IFC before its official release.

New York State has also actively engaged with local Authorities Having Jurisdiction (AHJ) and fire departments to provide training and education on BESS and recent code updates and plans to continue efforts to support the safe installation of BESS across the state. This will include clarifying requirements through code language and providing avenues for local jurisdictions to seek independent third-party plan reviews by organizations deeply familiar with BESS safety and code compliance.

## Scope

This document is intended to provide an overview of potential ways to improve the Fire Code based on WG discussions and Fire Code review, and to provide a list of recommendations for consideration for future code installments and other state requirements to address safety concerns. These findings and recommendations will be shared with other organizations including, but not limited to the New York City Fire Department (FDNY), National Fire Protection Association (NFPA), International Code Council (ICC), and Underwriters Laboratories (UL), in addition to being released for public comment.

The recommendations outlined in this memo are intended to apply solely to lithium-ion BESS exceeding the 600 kilowatt-hour (kWh) Maximum Allowable Quantity (MAQ) threshold, as established per the 2020 FCNYS Table 1206.12. Further, the recommendations were developed with a focus on outdoor, dedicated use buildings, and other grid-scale BESS systems. As such, some of these requirements may be inappropriate or unnecessary for indoor energy storage systems.

**The WG recommendations comprise three categories:**

1. **Proposed Recommendations for Fire Code Updates**—These recommendations pertain to existing sections of the FCNYS where potential improvements have been identified in the years since the code went into effect. These recommendations propose updates to bring the regulations in line with recent developments in the BESS industry.
2. **Proposed Recommendations for Fire Code Additions**—These recommendations draw from other standards and regulations that apply to BESS that should be considered for inclusion as new sections in the FCNYS. Additionally, leaders in the BESS fire safety sector in New York and nationally have leveraged their experience, knowledge, and expertise to recommend new standards for inclusion in the FCNYS that have not yet been officially adopted in any existing BESS codes, standards, and regulations.
3. **Additional Considerations**—Some of the issues identified in the WG did not fall into either of the previous categories. These considerations may not be appropriate for incorporation into the FCNYS, but they could help to address potential issues with BESS fire safety through other regulatory mechanisms.

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<sup>2</sup> See Notice of Emergency Adoption and Proposed Rule Making in the July 17, 2019 State Register, Notice of Emergency Adoption in the October 17, 2019 State Register, and Notice of Adoption in the October 17, 2019 State Register.

These proposed recommendations could lead to better coordination with and training for local AHJs and emergency responders in the planning phase of projects, enhanced review of project design and emergency response plans, inclusion of critical safety features in the design and construction of the site, and ongoing emergency preparedness. As the BESS industry evolves, the consideration and potential inclusion of these proposed recommendations into the FCNYS will advance the safe and reliable growth of BESS capacity that is critical to the clean energy transition.

## Proposed Recommendations for Fire Code Updates

The WG conducted a thorough analysis of the existing fire code in addition to recently updated model codes and standards and prepared recommendations, which are organized by the relevant section of the existing FCNYS, for the next code cycle update of the FCNYS. This section provides a summary of identified potential improvements to the current **2020 Fire Code of New York State Section 1206 Electrical Energy Storage Systems**. Where available, sections from corresponding sections of **2023 NFPA 855**, the proposed **2024 International Fire Code Section 1207**, or other codes and standards are provided for reference. Though the 2024 IFC references the 2021 NFPA 855, the WG recommends that the Code Council reference 2023 NFPA 855 in the next edition of FCNYS.

### 1. FCNYS 1206.8 PEER REVIEW

**Require industry-funded independent peer reviews for all projects.**

Local AHJs often lack the resources or expertise to understand and interpret critical BESS permitting documents, particularly the UL 9540A report, which contains product-level test data on which to base important siting decisions and requirements. This gap in AHJ expertise has led to incomplete or inadequate applications in which the requirements of FCNYS 1206 are not sufficiently met.

"Peer reviews" by experts in the field can assist local AHJs in their review and understanding of BESS permit applications and their compliance with existing Fire Code requirements. Currently, FCNYS 1206.8 Peer Review empowers local AHJs to require that BESS developers pay for an independent peer review of the developer's permit application. However, despite the benefits, peer reviews are rarely utilized.

As such, the WG recommends that peer reviews be required for all BESS installations exceeding energy capacity thresholds per FCNYS Table 1206.1 to ensure proper compliance and oversight for upcoming projects.

When identifying potential candidates qualified to conduct peer reviews, the use of third-party entities or insurers should be considered in order to provide a level of independence and transparency. Further, NYSERDA or another qualified entity could issue a rolling Request for Qualifications solicitation for firms qualified to conduct BESS peer reviews to establish a list of peer reviewers that BESS project developers can utilize.

The WG notes that a corollary section from Chapter 1 of the 2021 IFC (104.8.2 Technical Assistance) was not adopted into 2020 FCNYS, presumably addressed by the inclusion of 1206.8 Peer Review. The 2024 IFC does not currently contain language for Peer Review in Chapter 12. The WG strongly recommends that the provision for peer review be left in Chapter 12 of the Fire Code and be mandatory for all BESS projects.

**2. FCNYS 1206.13.3 EXPLOSION CONTROL**

**Expand the requirement for explosion control to include BESS cabinets in addition to rooms, areas, and walk-in units. Additionally, provide design requirements or language for what constitutes a “passable” system.**

A primary concern associated with lithium-ion BESS is the potential for explosion or deflagration due to accumulation of flammable off-gases within a confined space, such as a battery enclosure. Currently, FCNYS 1206.13.3 requires that explosion control be provided for lithium-ion BESS in rooms, areas, or walk-in energy storage units, and is therefore not required for non-enterable BESS units, also referred to as “cabinets”. As such, the WG recommends that the requirement for explosion control is expanded to include BESS cabinets in addition to rooms, areas, and walk-in units.

The current code also does not include design requirements for what constitutes a “passable” explosion control system, which should be established in the next installment of the FCNYS. Currently, **NFPA 855**, and **FDNY 3 RCNY 608-01** require that an explosion control system be provided in accordance with one of the following:

- Explosion prevention in accordance with NFPA 69 Standard on Explosion Prevention Systems.
- Deflagration vent panels in accordance with NFPA 68 Standard on Explosion Protection by Deflagration Venting.

Additionally, alternative explosion control systems currently exist, and language in the next edition of FCNYS should also include flexibility for other potential solutions outside of NFPA 69 and NFPA 68.

Current code also does not require that any substantiating documentation be provided to AHJs to demonstrate the effectiveness of the explosion control system to either mitigate against the impact of an explosion or prevent an explosion from occurring altogether (e.g., Computational Fluid Dynamics (CFD) analysis, sizing calculations, or physical testing of the explosion control system). This gap has been addressed in **NFPA 855** and **APS Appendix W** and similar language is recommended for updates to the FCNYS.

The 2023 NFPA 855 also includes language which requires testing of deflagration mitigation measures when designed into BESS cabinets (9.1.5.1.4), with validation of the effectiveness of the system demonstrated through fire and explosion testing and engineering evaluation.

Additional language relating to explosion control systems is currently provided in **2023 NFPA 855**, **Arizona Public Service (APS) Appendix W**, and **FDNY 3 RCNY 608-01(h)(4)** and should be consulted in developing the explosion requirements in the next edition of FCNYS.

**Referenced Codes / Standards:**

- **2023 NFPA 855:** 9.6.5.6 Explosion Control, 9.1.5 Fire and Explosion Testing, A.9.6.5.6, A.9.6.5.6.3, A.9.6.5.6.4
- **APS Appendix W:** 2 Applicable Standards and Codes, 4 System Design/Layout, 6 Fire and Explosion Detection, Alarm, Control, and Suppression/Protection, 7 Modeling, 13 Documentation
- **FDNY 3 RCNY 608-01:** (h)(4) Explosion Mitigation

**3. FCNYS 1206.7.1 FIRE MITIGATION PERSONNEL**

**Require that qualified personnel are available for dispatch within 15 minutes and able to arrive on scene within four hours to provide support to local emergency responders.**

In the event of a BESS fire, it is critical that qualified personnel or representatives of the site owner/operator with knowledge of the BESS installation can be deployed on-site to support local emergency responders. Section 1207.1.8.1 of the upcoming 2024 IFC requires that, where in the opinion of the fire code official it is essential that trained personnel be on-site, these personnel be dispatched within 15 minutes. The WG recommends that this is required for all projects—not only where deemed essential by the fire code official—and that these fire mitigation personnel are able to arrive on scene within four hours to provide expert guidance to local first responders. Additionally, the WG recommends that these personnel be familiar (e.g., successfully completed [ICS-100](#), [ICS-200](#), and [IS-700B](#) training courses) to effectively coordinate with local public emergency services during an event.

One way to address this recommendation may be to adopt a certification program similar to FDNY's B28 Certificate of Fitness. Exploring other approaches beyond code changes (e.g. legislation) may also help address these concerns effectively.

The WG also recommends that the Fire Code require a qualified person knowledgeable about the project and associated hazards be immediately available via phone. Additional information on this recommendation is in the "Systems Monitoring" recommendation below.

**Referenced Codes / Standards:**

- **2023 NFPA 855: 9.6.6 Remediation Measures, C.1.1 Emergency Responder Pre-incident Planning**
- **2024 IFC: 1207.1.8.1 Fire Mitigation Personnel**
- **FDNY 3 RCNY 608-01: (c)(5) Supervision, (i)(4) Technical Assistance, (i)(5) Emergency Management**

**4. FCNYS 1206.11.8 SIGNAGE**

**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.**

These signs should clearly display 24-hour emergency contact information and relevant hazard warnings, ensuring improved safety and clear communication for emergency responders and the public. 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. It is critical that this information be accessible outside the project fence line for the health and safety of first responders.

- a) **The WG recommends the FCNYS directly include signage requirements and/or applicable NEC references for grid-interactive BESS operating in parallel with other power generating sources.** The FCNYS requires compliance with all applicable NEC signage requirements, which can involve multiple different sections depending on the system design. Section 1207.4.8 of the 2024 IFC addresses signage for multiple energy systems.

b) **Update the Fire Code to require clear and apparent identification of explosion control panels.** This measure will help ensure that first responders can easily recognize and stay clear of the respective hazard zones, reducing the risk of accidents and facilitating a more efficient and secure emergency response. Section 911.4.1 of the 2024 IFC addresses signage for deflagration venting, though this language may need to be expanded to include other methods of explosion control in addition to deflagration.

##### **5. FCNYS 1206.9.2.1 SYSTEMS MONITORING**

**Update the Fire Code to ensure that Battery Management System (BMS) data is monitored by a 24/7 staffed Network Operations Center (NOC). Critical failure notifications should be immediately communicated to the site owner/operator to take corrective actions as necessary.**

The WG recommends that the Fire Code require that Battery Management System (BMS) data be monitored 24/7 by a Network Operations Center (NOC) / Remote Operations Center (ROC), staffed by trained personnel with working knowledge of the BESS and sites under their purview. Additionally, the WG recommends that NOC/ROC staff be immediately available to relay relevant data to the local fire department to help guide emergency response if requested.

The NOC could fulfill the recommendation that a qualified person be available for immediate phone consultation found in the last paragraph of the Fire Mitigation Personnel recommendation section.

The NOC providing 24/7 remote monitoring of the BMS or Energy Storage Management System (ESMS) should have the ability to immediately relay alarm notifications indicative of a thermal runaway or other battery failure event to the system owner, O&M company, or other associated parties. Additional information and language for reference is available in 2023 NFPA 855 and FDNY 3 RCNY 608-01.

##### **Referenced Codes / Standards:**

- **2023 NFPA 855: A.4.3.2.1.4(3)**
- **FDNY 3 RCNY 608-01: (g)(2) Remote Monitoring, (i)(1) Remote Monitoring of Battery Management System and Reporting, (i)(3) Remote Monitoring at Constantly Attended On-Site Location**

##### **6. FCNYS 1206.11.9 SECURITY OF INSTALLATIONS**

**Update the Fire Code to incorporate requirements for closed-circuit television (CCTV) systems, specifying their intended use as both a continuous monitoring tool and a post-event analysis resource.**

This update would be specific to New York, as it is not currently incorporated into NFPA 855 or the 2024 IFC. The WG has learned that CCTV systems can play a critical role in incident analysis, in addition to providing potentially useful real time monitoring capabilities, and therefore the WG recommends including a requirement for CCTV. Access to CCTV footage should be available to emergency responders during an incident in addition to being provided to the AHJ to assist with post-incident investigation.

## 7. FCNYS 1206.2 APPLICABILITY

**Remove the Fire Code exemption for BESS projects owned or operated by electrical utilities to ensure that all projects comply with the Fire Code.**

The removal of this exemption can address concerns relating to access to critical information and jurisdictional authority, promoting safety and accountability. The suggested code revision should be carried out in collaboration with relevant stakeholders to assess the extent of code enforcement authority for public utility projects, maintaining safety standards even in cases involving electric utilities. This recommendation aligns with the proposed language of section 1201.1 in the 2024 International Fire Code (IFC) and should be considered for inclusion, ensuring a consistent and thorough regulatory framework for all energy systems in the state.

## Proposed Recommendations for Fire Code Additions

### 1. EMERGENCY RESPONSE PLANS and REGULAR FIRE DEPARTMENT TRAINING

**Include a requirement for an Emergency Response Plan (ERP) and annual local first responder training for every BESS installation.**

The WG strongly recommends that a site-specific Emergency Response Plan (ERP) be required in the Fire Code update to ensure that every BESS facility is equipped with a comprehensive strategy for addressing potential emergencies 24 hours a day. While 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. As such, 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 code should remove any ambiguity around the NFPA requirements and require that system owner/operators provide emergency response plans directed toward first responders and annual site-specific trainings to local fire departments.

This requirement should specify that the ERP must be accessible on-site and shared with the local fire department. Different fire departments may have specific requirements or conditions for presentation of ERPs (e.g., type of lockbox, etc.); therefore, the WG recommends that the FCNYS grant the AHJ the flexibility to determine the most suitable presentation of the ERP based on local fire department needs. This ERP should be developed in consultation with the local fire department to ensure it is in alignment with their operating procedures, capabilities, resources, etc. In all cases, a copy of the ERP must be maintained on-site outside the fence line of the project.

The WG 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. The WG recommends that annual trainings be provided to address potential turnover in fire department personnel, and that a log of training records be maintained. The AHJ would play a key role in overseeing and regulating the implementation of this requirement, ensuring that BESS installations are well-prepared for emergencies and that all response team members are adequately trained.

### Referenced Codes / Standards:

- **2023 NFPA 855: 4.3.2.1 Emergency Operations Plan, G.11.2 Emergency Responder Pre-incident and Emergency Operation Planning**
- **2020 FCNYS: 403 Emergency Preparedness Requirements**

## **2. CENTRAL STATION MONITORING OF BESS FACILITIES**

**Include a Fire Code requirement for monitoring of fire detection systems by a central station service alarm system to ensure timely, proper notification to the local fire department in the event of a fire alarm.**

The WG recommends that this requirement specify that the central monitoring station must comply with relevant requirements in NFPA 72. The code should also define criteria for triggering alarms and notifying first responders, ensuring that only critical incidents prompt a response from emergency services. The NOC should be available to assist in determining which incidents are critical enough to warrant a response from emergency services. Clarity in the definition and role of central station monitoring in BESS installations is essential to establish consistent and effective practices across different jurisdictions and facility types. The WG recommends referencing the language in section 1207.5.4 of the 2024 IFC.

### **Referenced Codes / Standards:**

- **2024 IFC: 1207.5.4 Fire detection**
- **FDNY 3 RCNY 608-01: (i)(2) Central Station Monitoring of Fire Protection System**
- **NFPA 72 Fire Alarm & Signaling Systems**

## **3. FIRE STOPS, BARRIERS, or FIRE BREAKS**

**Mandate the installation of fire stops for all BESS enclosure penetrations to prevent the propagation of fires from one BESS unit to another through these pathways.**

While this specific topic is currently not addressed in the 2024 IFC or NFPA 855, incorporating fire stops or barriers can be effective in limiting fire spread in various facilities. To ensure effectiveness of this requirement, the WG recommends that the code update should include guidance on the installation and performance standards of these fire breaks or barriers to ensure there is no propagation of fire across BESS enclosures.

## **4. PERIODIC SPECIAL INSPECTIONS**

**Introduce a new provision in the Fire Code mandating industry-funded special inspections for BESS installations to ensure thorough safety and compliance.**

The WG recommends requiring special inspections at a regular cadence. The FCNYS should specify a comprehensive scope of inspection criteria, including aspects such as verifying emergency response contacts, system layouts, signage, and other critical components relevant to BESS safety. The frequency of these special inspections should be established to correspond with the specific needs and risks associated with BESS installations. These inspections should be conducted by specialized, third-party experts who possess the necessary expertise in BESS systems.

## **5. CURRENT PERCEIVED EXEMPTIONS FOR BESS CABINETS**

**Include “cabinets” in all Fire Code requirements that pertain to rooms, areas, or walk-in units, except for fire suppression requirements, as they may be inappropriate for cabinets.**

The 2020 FCNYS outlines requirements for outdoor BESS in §1206.15 and *Table 1206.15 (Outdoor ESS Installations)*, including general requirements within §1206.11 (*General Installation Requirements*). However, the existing language of certain sections initially only appears to be applicable for indoor and outdoor *walk-in* BESS, as they do not directly address outdoor non-enterable, or *cabinet*,

BESS—contradicting with Table 1206.15—causing uncertainty for the appropriate application and ensuing enforcement of requirements.

Although the Fire Code does state that “the most restrictive [requirement] shall govern” where there are conflicts between sections, the WG recommends removing any ambiguity of *cabinet ESS* applicability for the following requirements:

- §1206.6 Large-scale Fire Test
- §1206.11.9 Security of Installations
- §1206.12.2 Maximum Allowable Quantities of ESS (MAQ)
- §1206.12.4 Fire Detection

This can be accomplished by including “cabinet BESS units” directly into the identified sections, [while ensuring language can be carried over / aligns with the model 2024 IFC (during the NY code update process)] as can be seen below with recommended clarifications (in bold) within the existing 2020 FCNYS language:

The FCNYS defines an energy storage system cabinet as a cabinet containing components of the energy storage system that is included in the UL 9540 listing for the system. Personnel are not able to enter the cabinet, other than reaching inside to access components for maintenance purposes. Historically, cabinets were not directly addressed by several important regulations in the FCNYS. Upon incorporating energy storage system cabinets in existing requirements, it will be important to be clear that requirements apply to rooms, areas, walk-in units, or cabinets, eliminating misinterpretations that would result in redundant requirements (e.g., fire detection requirement in both the room and energy storage system cabinet).

Implementing the recommendations in the previous two sections will help to maintain New York's status as a national and global leader in energy storage fire safety. After months of lengthy discussion and document review among the WG participants, these concrete suggestions are recommended to the New York State Code Council.

## Additional Considerations

### 1. ROOT CAUSE ANALYSIS

The WG concluded that the Fire Code may not be the appropriate place to require a Root Cause Analysis (RCA).

The WG identified a need to create a hard requirement for Original Equipment Manufacturers (OEMs) to disclose RCAs to relevant local and state authorities for analysis and evaluation with the intent of promoting continuous improvement of energy storage system fire safety. The WG concluded that the FCNYS may not be the appropriate mechanism to grant government access to RCAs resulting from past or future fires associated with a particular energy storage system product, as OEMs are not directly subject to Fire Code requirements unless they are also acting as project developers. To address potential gaps and establish a clear framework for this requirement, the following suggestions should be considered:

- a) Define the scope of the requirement to include faults that result in a fire or necessitate a response from first responders, making it clear that not all faults require an RCA.
- b) Standardize the format of the RCA submission by creating a template that includes specific information, such as manufacturer and model numbers of components, system schematics,

maintenance logs, operational data leading up to the incident, battery monitoring system logs, and details about fire suppression systems.

- c) Set a deadline for providing the RCA information to the relevant authorities, specifying that it should be delivered within a defined number of days after the incident.
- d) Offer flexibility in the choice of RCA methods and analysis entities but endorse a list of pre-qualified firms or methods to ensure consistency and reliability in the analysis.
- e) Emphasize transparency in the process to facilitate effective communication between local authorities, operators, and OEMs. Transparency is essential for building trust and ensuring that all parties have access to the same data for a comprehensive understanding of the incident.
- f) Consider the inclusion of a requirement for peer review of the RCA to ensure the accuracy and credibility of the analysis.

## 2. WATER SUPPLY

**The WG recommends establishing guidance for water supply, including whether water is appropriate for different technologies, in an emergency response to a BESS fire and determining if more specific requirements are necessary.**

Given the challenges associated with fully extinguishing BESS fires and the variability in system capacity and design, the code should consider the intended purpose of the water supply, whether it is for cooling, smoke control, preventing fire spread, or other scenarios. Referencing Chapter 5 of the code and standards like NFPA 1142 may provide a starting point for establishing water supply guidance and requirements. The code should aim to define the specific conditions and scenarios where water supply is necessary and outline the minimum flow rates and water storage requirements, taking into account factors like distance from the water source and the capacity of fire departments for shuttle operations. This information should be detailed and explicit, acknowledging the complexities of BESS facilities and the unique challenges they pose for firefighting. Further discussions should be held by the code council, potentially including relevant subject matter experts, to ensure comprehensive guidelines for water supply in BESS facilities, including exceptions for systems to which water should not be applied in the event of fire.

### Referenced Codes / Standards:

- 2022 NFPA 1142: Standard on Water Supplies for Suburban and Rural Firefighting
- 2023 NFPA 855: G.11.2 Emergency Responder Pre-incident and Emergency Operation Planning

## 3. TRANSFORMERS CONTAINING HIGHLY FLAMMABLE MATERIALS

**Recommend that the Code Council have further discussions around clearance distances of oil-insulated transformers from BESS.**

The WG notes that propagation of fire or heat flux from a BESS fire may pose great risk to non-dry-type (e.g., oil-insulated) transformers, which may exacerbate the impact of a BESS failure incident. FCNYS 1206.15.3 states that energy storage systems located outdoors shall be separated by a minimum of 10 feet from exposures such as lot lines, public ways, and buildings, as well as "other exposure hazards", which oil-insulated transformers could fall under. However, it is not clear that this interpretation has been enforced by AHJs. The corresponding section of 2023 NFPA 855 (9.5.2.6.1), however, notes that BESS are separated by 10 feet from "other exposures not associated with electrical grid infrastructure", implying that this does not need to apply for transformers.

The WG recommends that the Code Council hold further discussions around clearance distance requirements be pursued to determine if clearance distance requirements should be explicitly enforced for oil-insulated transformers in upcoming code. This discussion should include a review of potential updates to standards and requirements.

**Referenced Codes / Standards:**

- **2024 IFC: 1207.8.3 Clearance to Exposures**
- **2023 NFPA 855: 9.5.2.6.1 Clearance to Exposures**
- **FDNY 3 RCNY 608-01: (g)(1)(C) Separation Distances**
- **FM Global Property Loss Prevention Data Sheets: 5-4 Transformers**

## CONCLUSION

After months of careful deliberation and a consensus-based process, the WG intends to submit the recommendations in this document to the Code Council for consideration in the next code installment. The Working Group seeks comments from interested stakeholders on these proposed recommendations for incorporation into the final submission to the Code Council. While the most critical issues identified by the WG could be addressed by better enforcement and adherence to the existing code, the recommendations in this memo have been identified as ways to further improve the regulatory framework for BESS in New York.

