



# New York Battery and Energy Storage Technology Consortium, Inc.



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March 5, 2024

Dear Inter-agency Working Group Members:

The New York Battery and Energy Storage Technology Consortium (“NY-BEST”) and the Alliance for Clean Energy New York (“ACE NY”) are writing to provide comments and recommendations on the Inter-agency Working Group’s Fire Code Recommendations released on February 6, 2024.

**NY-BEST** is a not-for-profit industry trade association with a mission to catalyze and grow the energy storage industry and establish New York State as a global leader in energy storage. Our 180 member organizations include: technology developers ranging in size from global energy storage companies to start-ups, manufacturers, project developers, project integrators, engineering firms, law firms, leading research institutions and universities, and numerous companies involved in the electricity and transportation sectors.<sup>1</sup>

**ACE NY** is a member-based organization with a mission of promoting the use of clean, renewable electricity technologies and energy efficiency in New York State to increase energy diversity and security, boost economic development, improve public health, and reduce air pollution. Our diverse membership includes companies engaged in the full range of clean energy technologies as

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<sup>1</sup> NY-BEST comments reflect the position of the organization as a whole and do not necessarily represent the position of our individual members. Our membership has diverse interests and NY-BEST seeks to represent the broad interests of the energy storage industry.

well as consultants, academic and financial institutions, and not-for-profit organizations interested in our mission.

## **INTRODUCTION**

NY-BEST and ACE NY greatly appreciate the time and dedication of the Working Group members in preparing its recommendations. We share the Working Group's interest in ensuring the safe deployment of battery energy storage systems (BESS) in New York and beyond and we are largely supportive of the Working Group's proposed recommendations. NY-BEST's and ACE NY's comments and suggestions reflect input from subject matter experts in the field of battery energy storage with experience safely deploying BESS around the nation.

## **NY-BEST AND ACE NY COMMENTS AND RECOMMENDATIONS**

We have organized our comments and recommendations below to coincide with categories and numbering included in the Working Group's Fire Code Recommendations.

### **1) Proposed Recommendations for Fire Code Updates**

#### **a.) FCNYS 1206.8 PEER REVIEW**

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

NY-BEST and ACE NY generally support this recommendation, and we offer several suggestions to improve it. First, we recommend that the peer review process be clearly defined and harmonized across the state and should include the steps that must be taken for a peer reviewer to be engaged as well as required timelines to complete reviews. NY-BEST and ACE NY suggest the Working Group review the peer review process established by the City of New York for BESS projects as a potential model to build upon for use across the state. Under New York City's process, the peer review process is clearly outlined and defined. The peer reviewer has a specified role -- to review the UL 9540A test results, confirm the results are being properly interpreted and incorporated into the BESS siting plans, and ensure compliance with the relevant code requirements.

NY-BEST and ACE NY recommend that NYSERDA centralize and manage efforts to establish a qualified peer reviewers list that is sufficiently large, and routinely and regularly augmented, to avoid bottlenecks in project reviews due to a limited pool of qualified peer reviewers. A centralized review and qualification process, administered by NYSERDA, will help ensure oversight and consistency of the peer review process, as well as establish predictable pricing for peer review services.

NY-BEST and ACE NY also recommend that that the peer review process adopted by the State reflect the BESS project maturation timeline. More specifically, BESS developers typically first seek conceptual or preliminary zoning/siting approval from a local AHJ (prior to selecting and procuring a specific BESS OEM) to ensure the proposed project is viable. Once that conceptual/preliminary approval is obtained,

the BESS developer typically secures financing, procures the BESS system and completes final siting plans for the selected BESS. We recommend that the peer review engagement align with this project development process.

**b.) 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.**

NY-BEST and ACE NY generally support this recommendation. We recommend, however, that rather than specifically identifying every applicable space (e.g. cabinets) in the code, a more general definition should be included to require deflagration control in any space where venting batteries can create trapped flammable gases. This will allow the code to be adapted as BESS installations and designs evolve.

NY-BEST and ACE NY also agree that the FCNYS should be updated include flexibility to account for "alternative methods" with explicit pass/fail acceptance criteria for non NFPA 68 and NFPA 69 designs.

**c.) 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.**

NY-BEST and ACE NY have several recommendations for improving this recommendation. First, we urge the Working Group to consider requirements for fire mitigation personnel in tandem with the additional strengthened requirements being proposed for First Responder training, NOC/ROC establishment and BMS monitoring.

NY-BEST and ACE NY agree BESS developers have a responsibility to provide training and expert assistance for first responders. We propose that the purpose and goal of this recommendation be clarified to stress the need to ensure 1) immediate access to expert assistance in response to an incident and 2) relief for local first responders from a potential long-term engagement.

With respect to meeting the first objective, providing expertise to first responders, NY-BEST, ACE NY and our member SMEs believe this expertise can be effectively provided remotely especially given the owner/operator’s ability to readily access valuable information from NOC/ROC and video monitoring and ability to remotely control some operations. We agree that remote expert support should be immediate, i.e., within 15 minutes of a triggering event.

To meet the second objective, the need to relieve local first responders from a potential long-term engagement, NY-BEST and ACE NY recommend the Working Group revise its recommendations. Specifically, the four-hour on-site response time is simply not practical to meet for every corner of New York State. NY-BEST has conferred with companies that specialize in this type of work and they agree that it is not feasible. We are also concerned that this requirement is not supported and is

unreasonable. If left unchanged, it will create a costly and burdensome requirement on BESS which will seriously undermine needed BESS development in NYS. Instead, we recommend the Working Group engage with industry to discuss options and alternatives for addressing this objective, consistent with the State's commitment to meaningfully engage stakeholders.

NY-BEST and ACE NY also recommend that the Working Group clarify what specific events will trigger a response under this recommendation. We suggest that the triggering event be a fire alarm that is confirmed as not being a false alarm.

We also recommend that the term "Qualified Personnel" be defined to include the OEM (and their representatives), fire/emergency personnel, and the BESS owner (and their representatives).

**d.) 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.**

NY-BEST and ACE NY support this proposed requirement. The 2023 NFPA 855, Section 4.7.4 requires 'approved' signage in 'approved' locations on outdoor ESS. Warning signs for deflagration vents are currently required in NFPA 68 Section 6.6.3. We note, however, that the deflagration vent warning signs are not appropriate for designs using combustible concentration reduction in compliance with NFPA 69. NY-BEST further recommends that signage indicate the most recent date that the sign was updated or verified to be accurate.

**e.) 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.**

NY-BEST and ACE NY generally support this recommendation. However, we recommend that the Working Group specify the minimum requirements for monitoring. NY-BEST and ACE NY recommend that the BMS monitor data that is needed for advanced warning of potential issues (i.e., temperature, smoke/gas) and that systems should have a minimum of one measurement point per enclosure. We recommend that liquid-cooled systems monitor for leaks where feasible. Finally, NY-BEST recommends that the State of Charge be monitored for each BESS container.

**f.) 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.**

NY-BEST and ACE NY support this recommendation, however, we encourage the Working Group to adopt the term "video monitoring" rather than CCTV to reflect current technology. We recommend that

the Working Group clarify that post-event *recordings* of video footage be made available instead of real-time access to a live video feed (which would not be possible due to site cybersecurity & regulatory issues).

**g.) 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.**

NY-BEST and ACE NY have no comments on this recommendation.

## **2. Proposed Recommendations for Fire Code Additions**

**a.) 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.**

NY-BEST and ACE NY support this recommendation and offer suggestions for improving it. Our suggestions are as follows:

- We recommend that BESS developers be permitted to coordinate their efforts and combine training for fire departments in the immediate and adjacent municipalities to effectively leverage first responders' time for trainings. We recommend that specific BESS site tours still be required to be offered for each BESS site.
- We recommend that the code clarify that the BESS owner must offer annual training and document this offering. The BESS Owner/operator cannot compel local fire responders to participate in training. If first responders do not engage with developers to complete the required training, the developer should not be penalized.
- Similar to our comments under the peer review section, NY-BEST and ACE NY recommend that the timing of the ERP requirements reflect the project development maturation process. More specifically, we recommend that an ERP be required at the final permitting stage reflecting the final BESS OEM and siting plans. While a draft or preliminary ERP can be provided during an AHJ's concept/preliminary review, the preliminary ERP is subject to change until the OEM equipment, system controls, site plans are finalized, and this typically happens later in the development process.
- NY-BEST and ACE NY also recommends that the Working Group recognize and incorporate the reality that ERPs are living documents that are likely to be updated and adjusted annually to reflect changes or new information that becomes available.

**b.) 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.**

NY-BEST and ACE NY support and recommend that the proposed code additions for central station monitoring be met by the NOC, the owner/operator, or a third party. We also recommend that the code

language specify what events should trigger an alarm to the local fire department or alternatively provide for operators and local fire departments to determine this. More specifically, NY-BEST and ACE NY recommend that a reasonable interpretation of NOC data should be applied to avoid notifications of false alarms.

**c.) 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.**

Although NY-BEST and ACE NY understand the Working Group’s goal with this recommendation, we oppose it as written. Our primary concerns are that this recommendation could drive significant siting costs with minimal added benefit and could have unintended consequences due to lack of consistency with NFPA standards.

NY-BEST and ACE NY recommend that UL 9540A fire testing should guide what separation or additions need to be added to BESS to prevent fire propagation from one unit to another. We disagree with the assumption that prescriptive fire stops/barriers are needed (even for systems that are not classified as remote/outdoor). Rather, NY-BEST and ACE NY recommend fire stops be required to the extent that they are used in the system’s 9540A testing, or to justify spacing/protection equipment that is different from that used in the 9540A testing. If there are any issues or concerns around proper interpretation of 9540A testing results, these should be resolved via the new peer review requirement.

Importantly, proposals for the 2026 revision of NFPA 855 include a requirement to verify that complete combustion of a BESS enclosure does not result in propagation of fire to adjacent units. Consistent with this direction, NY-BEST and ACE NY recommend supporting performance-based requirements and recommend against unsupported prescriptive measures.

**d.) 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.**

NY-BEST and ACE NY recommend that the inspections be administered and managed by NYSERDA or its designated third party and follow a standardized review cycle and inspection evaluation format.

**e.) 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.**

NY-BEST and ACE NY support this recommendation.

**3. Additional Considerations**

**a.) ROOT CAUSE ANALYSIS**

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

NY-BEST and ACE NY support the framework and suggestions outlined by the Working Group. We also support the prompt public release of RCAs for significant events and suggest that a threshold be established for significant events that would trigger the RCA requirement. We further urge the Working Group to recognize that RCA data may take time to obtain, and certain data may be restricted from public disclosure, and we request that this be incorporated in the final requirements.

**b.) 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.**

NY-BEST and ACE NY recommend that any water supply requirements should be dependent on the BESS system and site-specific considerations, and not adopt a one size fits all approach. Some BESS OEMS specifically advise against spraying water on BESS containers. Systems should be required to have water available only if water is recommended by the OEM or the Emergency Response Plan or if water was used in the 9540A testing, and the permit application is relying on that 9540A testing to exempt the system from requirements (e.g. separation distances). Having vague language in the recommendations about water supply that is inconsistent with NFPA requirements adds significant uncertainty around project viability.

**c.) TRANSFORMERS CONTAINING HIGHLY FLAMMABLE MATERIALS**

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

NY-BEST and ACE NY agree that further discussions are needed with respect to clearance distance requirements. Separation requirements should be based on the type of fluid and the volume of the fluid in the transformer. NFPA, FM Global, UL, and IEEE base their recommendations on the type of fluid, and then either the primary voltage or the volume of the fluid when determining classification. For mineral oil, the spacing should be based on the gallons of fluid and follow recommendations from NFPA 850 or IEEE 979. As mentioned in NFPA 850, there are multiple ways to minimize potential spread of fire and damage caused by transformer failure (physical separation being one of them) and should be handled on a project-by-project basis by a licensed professional. For UL-listed less flammable liquids, the spacing of units should be based on the requirements in the product listing as well as recommendations from the industry standards mentioned above. NY-BEST and ACE NY further suggest consideration of cabinet systems that include

transformer and inverter integrated on a skid as any codes provisions are developed to ensure that these types of systems are not inadvertently prevented from being deployed.

## **CONCLUSION**

NY-BEST and ACE NY appreciate the opportunity to provide our feedback and recommendations to improve the Working Group's Battery Safety Fire Code Recommendations. If you have any questions about our recommendations, please contact us at [info@ny-best.org](mailto:info@ny-best.org) or by phone at 518-694-8474.

Thank you for your consideration.

Sincerely,

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