November 1, 2021
Testimony of Assistant Chief Joseph Jardin, FDNY
Fire Code Revision

Good morning Chair Borelli and all Council Members present. My name is Joseph Jardin and I am the Chief of Fire Prevention at the New York City Fire Department. I am joined today by Assistant Chief Richard Blatus of the Bureau of Fire Operations, by FDNY's Code Counsel, Julian Bazel, and by FDNY's Director of Code Development, Shaji Joseph. Thank you for the opportunity to come before the committee today to discuss one of the most important tools that we have to protect the lives of New Yorkers and their property – the New York City Fire Code.

From the standpoint of fire safety, the last twenty years have been the safest in the city's history. After decades of experiencing well over 100 fire deaths a year – in some years 200 and 300 civilians died in fires – New York City has experienced fewer than 90 civilian deaths annually since 2006. A critical part of this improvement has been the adoption of strong Fire and Building Codes that mandate a safer built environment.

The New York City Fire Code ("the Code") regulates the manufacturing, storage, handling, use, sale, and transportation of hazardous and combustible materials. It also addresses the operation, and maintenance of fire extinguishing systems, fire alarm systems, and other fire prevention and mitigation devices. The Code further mandates emergency preparedness and planning in all types of buildings and occupancies. The Code is updated periodically in recognition of new and

emerging hazards and evolving risk reduction alternatives and to implement innovative code solutions. The cyclical code development process promotes transparency and clarity for the benefit of the building owners, businesses, and design professionals who are obligated to abide by it. Introduction 2430 represents the culmination of a three year process to incorporate updates that will enhance the safety of all New Yorkers, including the first responders who must operate in buildings and locations positively impacted by the Code.

Process

The 2021 Fire Code incorporates amendments that are the result of a comprehensive revision process conducted by the Fire Department and a wide variety of partners and external stakeholders. The process, facilitated by Fire Department subject matter experts, involved working together with representatives of the Department of Buildings, the City Council, and members of industry, professional, trade, and union organizations to form four Technical Committees, a Managing Committee, and an Advisory Committee. These groups considered potential amendments sourced from the 2012, 2015, and 2018 editions of the International Fire Code, as well as local initiatives resulting from lessons learned since the enactment of the 2014 Fire Code.

The process also included ample opportunity for extensive review and comment by the general public, including a number of formal sessions and many informal, ad-hoc conversations with affected stakeholders. Following the receipt of public comments submitted via web portal in May

2021, the Fire Department held a public forum in June 2021. Considerable feedback was received and the legislation reflects the benefit of those stakeholder interactions.

Key Updates

The Code will become more user friendly to many users. The bill reformats many of the Fire Code chapters and sections to conform with the International Fire Code. We expect that this change will improve understanding and be helpful to businesses and design professionals who are already familiar with the International Fire Code, which serves as the fire code in many places outside of New York City.

Other key areas of the revised Code reflect the current global focus on energy and economic development. From record-breaking heat waves to rising sea-levels along our coastlines, climate change is not abstract. The Fire Department appreciates that it has a critical role to play in helping the City of New York reduce dependence on fossil fuels and achieve sustainable growth. This Code edition reflects the need to implement alternative energy sources and economic development without compromising fire and life safety or emergency response.

Specifically, this bill revises current requirements for stationary energy storage systems and establishes a regulatory framework that allows the introduction of new battery technologies in buildings while addressing the fire safety hazards associated with those technologies. Stationary energy storage systems can store and provide power for utility and building operations, including storing power collected from solar panels. However, lithium-ion and other new battery

technologies pose significant fire safety and explosion hazards, so we have revised the Code in a manner that prioritizes innovation while striking a balance with safety. We have also revised rooftop access requirements, making a series of changes based on feedback from proponents of solar power, to provide for the safe and effective operation of firefighters on rooftops during fires and emergencies while maximizing space usable for solar panels.

The revised Code also addresses hydrogen fuel gas rooms and biodiesel fuel storage, and it creates allowances for safe "fleet fueling," which is the process of fueling vehicles fleets in their lots directly from tank trucks. Rules in the existing code governing fleet fueling are very restrictive, but the Fire Department's history of offering variances has shown that this practice can be done safely with diesel fuel, so we have created a mechanism for enabling businesses to perform this merely by obtaining a permit. This is a good example of learning from experience and amending the Code to meet the needs of industry while maintaining safety.

Other topics of interest addressed in the Code include creating a mechanism that will allow distilleries to operate; providing relief for dry cleaning establishments via a sprinkler protection alternative for locations that were adversely impacted by environmental restrictions; a reorganization and clarification of rules governing blasting operations; and establishing storage and charging requirements for powered mobility devices, which are especially timely given the recent uptick in the use of motorized bicycles, motorized scooters, and other personal mobility devices that are powered by lithium-ion or other storage batteries. There have been more than

75 fires related to these devices this year alone, including fires that resulted in three fatalities, so we want to make sure that users understand the risk of fire and take steps to mitigate.

Conclusion

The Fire Department could not have achieved the completion of this code revision alone. The proposed bill is a result of a lot of hard work on the part of Fire Department subject matter experts along with the participation of our partners and colleagues at the Department of Buildings, the Law Department, City Council members and staff, environmental advocates, distillers, design and engineering professionals, and representatives from building management, utilities, real estate, unions, City University of New York, fire safety directors, and hospital organizations. Together we have crafted legislation that will improve the safety of the public, better protect first responders, and enable innovative technologies that will help our city achieve aggressive climate objectives. We look forward to this discussion with the Council and we would be glad to take any questions that you have at this time.

Thank you.

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November 1, 2021

Good morning Chairman, Members and Staff of the City Council Committee on Fire and Emergency Management. My name is Dottie Mazzarella. I am the Vice President of Government Relations for the International Code Council (ICC). The ICC is a member-focused association dedicated to helping the building community provide safe, resilient, and sustainable construction through the development and use of model codes (I-Codes) and standards used in the design, construction, and compliance processes. Most U.S. states and communities, federal agencies, and many global markets choose the I-Codes to set the standards for regulating construction, fire prevention, plumbing and sanitation, and energy conservation in the built environment.

I appreciate the opportunity to submit testimony in support of Int. 2430 to amend the New York city fire code, in relation to the advancement and regulation of energy storage systems and the adoption of current fire safety standards as incorporated in the 2015 edition of the International Fire Code (IFC). I most recently submitted testimony in support of Int. 2261 to update the Administrative Code of the City of New York, the New York City Plumbing Code, the New York City Building Code, the New York City Mechanical Code and the New York City Fuel Gas Code, in relation to bringing such codes and related provisions of law up to date with the 2015 editions of the International Building, Mechanical, Fuel gas and Plumbing Codes, with differences that reflect the unique character of the City. Int.2261 was passed by the City Council on October 7, 2021. Since the Construction Codes are coordinated with the Fire Code, it is critical that Int. 2430 also swiftly pass the City Council and subsequently be signed into law by the Mayor.

The I-Codes are currently adopted at the state or local level in all 50 States, the District of Columbia, Guam, Northern Mariana Islands, the U.S. Virgin Islands, Puerto Rico and here in New York City. The I-Codes are also used internationally in the Caribbean, Central America, the Middle East, Georgia, and Mexico.

The I-Codes are revised and updated every three years by a national consensus process that strikes a balance between the latest technology and new building products, economics and cost while providing for most recent advances in public and first responder safety and installation techniques. The I-Codes are correlated to work together without conflicts to eliminate confusion in building design or inconsistent code enforcement among different jurisdictions.

The ICC Code Development Process is an open, inclusive process that encourages input from all individuals and groups and allows those governmental members, including representatives from NYC, to determine the final code provisions. I am pleased that FDNY and DOB staff and other organizations in the City participate in the ICC Code Hearings, and as a result, several provisions of the current NYC Construction, Fire and Energy Codes have been incorporated into the 2015 I-Codes. This involvement and participation is critical to the success of future versions of the I-Codes. The technical and practical expertise of NYC fire and building officials, design professionals, builders, contractors, labor representatives and all organizations interested in building safety are vital to your adoption efforts as well as ours.

The International Code Council is honored to partner with the City of New York, and we look forward to continuing to serve your needs. Thank you for the opportunity to present testimony to you today in support of Int.2430. I am happy to answer any questions you may have or provide additional documentation.

Sincerely,

Dorothy Mazzarella
Vice President, Government Relations
International Code Council
dmazzarella@iccsafe.org
518-

REBNY Testimony | November 1, 2021

The Real Estate Board of New York to

The New York City Council Committee on Fire and Emergency Management on Intro 2430-2021

The Real Estate Board of New York (REBNY) is the City's leading real estate trade association representing commercial, residential, and institutional property owners, builders, managers, investors, brokers, salespeople, and other organizations and individuals active in New York City real estate. REBNY thanks the Council for the opportunity to comment on the proposed changes to the New York City Fire Code.

The standards set in the Fire Code are essential for New Yorkers to safely reside, work, and socialize throughout the five boroughs. The Fire Department's (FDNY) continual review and updates to the City's fire safety requirements for businesses and buildings is necessary to ensure New York's regulations remain current and account for recently identified fire risks and hazards, such as new technologies.

REBNY shares in FDNY's goal of improving public safety and thanks FDNY for its partnership and willingness to work with the industry throughout the code revision process. FDNY worked with industry representatives, including REBNY, seeking feedback on relevant sections of the Code. In particular, we appreciate FDNY's extensive engagement and conversations around fire operations in high-rise megastructures, building rooftop access, and stationary energy storage systems. Many of these demonstrate considerable effort from FDNY to accommodate the design and technology necessary to allow the city's buildings to comply with municipal and state resilience and sustainability efforts. Moreover, we believe the latest proposed Code language will improve fire safety standards without appreciable disruption to continued building development and operations.

This sort of long-term engagement with different subject matter experts to work through far-reaching and technical regulations is the archetype of good governance. As the City continues its work to improve life for New Yorkers, it should follow FDNY's approach by being inclusive, measured and addressing issues holistically rather than through disjointed acts and legislation.

REBNY broadly supports the proposed changes to the Fire Code, and we look forward to our continued collaboration as the Code is finalized and implemented and are eager to assist FDNY with outreach and education to ensure compliance with the changes.

Thank you for the consideration of these points.

Important Note

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Important Note

October 29, 2021

Via Email
Joseph C. Borelli
Chair of the Committee on Fire and Emergency Management
New York City Council
2955 Veterans Road West, Suite 2
Staten Island, NY 10309

Dear Mr. Borelli:

The Alliance for Telecommunications Industry Solutions (ATIS) Sustainability in Telecom: Energy and Protection Committee (STEP) is writing to urge the Fire Department of the City of New York and the New York City Department of Buildings to collaborate with the telecommunications industry to ensure that the amended New York City Fire Code does not negatively impact the reliability and availability of communications networks. To this end, ATIS STEP would welcome the opportunity to work with the City to address specific concerns regarding telecommunications standby power plants.

ATIS is a leading developer of standards and other technical deliverables for Information and Communications Technology (ICT) and Services companies. ATIS develops standards on a broad range of important issues, including 5G and the Internet of Things (IoT). Industry subject matter experts work collaboratively in ATIS' open industry committees, such as STEP. ATIS STEP develops standards and technical reports for telecommunications equipment and environments in the areas of energy efficiency, environmental impacts, power, and protection, including:

- ATIS-0600307.2018 *Fire Resistance Criteria – Ignitability Requirements for Equipment Assemblies, Ancillary Non-Metallic Apparatus, and Fire Spread Requirements for Wire and Cable*
- ATIS-0600330.2018 *Valve Regulated Lead Acid Batteries Used in the Telecommunications Environment*
- ATIS-0600003.2018 *Battery Enclosure and Rooms/Areas*

ATIS STEP understands that the City of New York is revising its Fire Code and that the revised code will, among other things, regulate new energy storage systems, such as those based on lithium-ion batteries, within New York City. STEP is concerned that the proposed revisions could negatively impact the use of telecommunication battery plants which have a long history of safe operation. These low voltage battery plants provide safe and highly reliable backup power to the vital telecommunications infrastructure. Such deployments have been granted special consideration in model building and fire codes so that network reliability is not negatively impacted.

Instead of evaluating telecom battery plants under the New York City Fire Code, ATIS STEP believes that lead-acid and nickel-cadmium batteries utilized within telecommunications power plants should continue to be considered telecommunications equipment. Therefore, these plants should be evaluated solely under the NFPA 76 *Standard for the Fire Protection of Telecommunications Facilities*.

ATIS STEP urges Fire Department of the City of New York and the New York City Department of Buildings to ensure that the amended New York City Fire Code does not negatively impact the reliability and availability of communications networks. Telecommunications carriers have historically collaborated closely with the Fire Department of the City of New York to establish installation requirements specific to telecommunications battery plants within the city. Such past collaboration has helped assure the safety of telecommunications equipment installations, including necessary standby batteries, without eroding essential network reliability.

If there are any questions or you would like additional information, please do not hesitate to contact the undersigned.

Respectfully,

John Fuller – ATIS Sustainability in Telcom, Energy and Protection Committee (STEP) Chair and ATIS STEP Network Power Systems Vice Chair

Ernie Gallo – ATIS Sustainability in Telcom, Energy and Protection Committee (STEP) Vice Chair and ATIS STEP Network Power Systems Chair

BROOKLYN SOLARWORKS

Comments Related to Proposed 2021 New York City Fire Code

Thank you for the opportunity to provide comments on the proposed Fire Department of New York's (FDNY) 2021 Fire Code Revisions. Brooklyn SolarWors is a local solar company serving all five boroughs of NYC, primarily one to four family homes with flat roofs—those with less than 10 degree pitch.

Since we founded our company in 2015, we have always ensured the safety of FDNY personnel by developing solar system designs that comply with the Fire Department of New York's Fire Code. We have engineered, manufactured, and patented a solar canopy structure to specifically address the 504.4.4 clear path requirements for flat roof solar systems. We have filed over 200 successful FDNY Rooftop Unit TM-5 Variance applications. We take the FDNY Fire Code provisions and the work done by FDNY firefighters seriously, and will continue to do so.

Upon review of the proposed changes in this new code cycle, we would like to call attention to the unintended consequences of the proposed language and respectfully ask that our perspective is factored into these code revisions. New York City's Fire Code already places more restrictions on the siting of rooftop solar photovoltaic (PV) systems than any other fire code in the nation. Brooklyn SolarWorks respectfully opposes additional restrictions that impede rooftop solar development without first seeing data demonstrating the necessity of the restrictions to protect the safety of either firefighters or the public.

Summary of Comments:

While we fully support FDNY in its role in protecting NYC buildings and citizens, we see these particular additions in 504.4.3,4 as unnecessary on already highly constrained roof spaces. These proposed requirements will reduce or outright eliminate many solar projects in NYC.

Unintended Consequences: If these additions are ratified, they will add additional complications in complying with New York City Local Law 92/94. Vertical renovation projects will also be able to avoid solar panel requirements under LL 92/94 by claiming exemption because of this stricter Fire Code.

These revisions are in opposition to stated NYC solar goals and could undermine the city's commitment to solar. Smaller capacity PV systems, and fewer eligible roofs for solar will also lead to a contraction of New York City's solar PV industry and its workforce and its economic recovery from the devastating effects of COVID-19. They will impede the realization of the City's and New York State's solar PV and decarbonization goals at a time when accelerated deployment of clean energy is more crucial than ever in order to mitigate the effects of the climate crisis.

More Clarification Necessary: Brooklyn SolarWorks is concerned with how the Department of Buildings will interpret and enforce the new code, and we want to ensure a clear common understanding of any new changes. Additionally, enshrining previously circulated interpretations as part of the 2021 Fire Code Revision will aid in future permitting.

We often see disagreement between DOB and FDNY interpretations of the same regulations, which adds friction to the already heavy permitting process for flat roofs. Clarification by FDNY is necessary to determine the full impact of these proposed changes. Adding friction into the process will increase solar project costs and, as a result, will cause some building owners to not pursue projects, which will delay New York City's stated goal of deploying 1,000 MW of solar by 2030 and achieving carbon neutrality by 2050.

Comment 1

The proposed change to clause 504.4.4.2 reads:

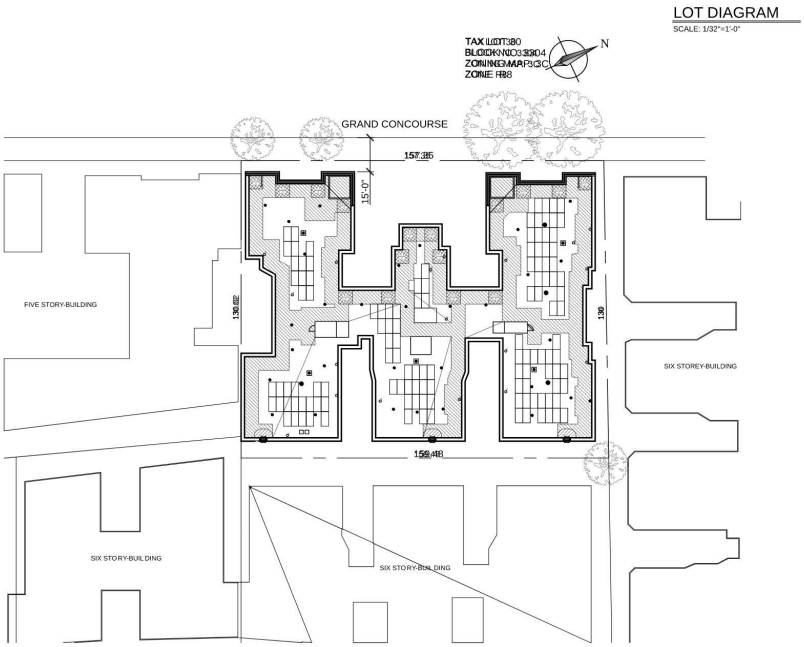
> *On buildings constructed after the effective date of this section, the clear path shall afford reasonable access, to the maximum extent practicable, to windowed areas on any side of the building that is not fire apparatus accessible.*

Adding this clause, even for new construction, will put an undue burden on an already complicated fire path requirement. Adding this requirement will reduce the amount of solar panels that can fit on a roof where windows are on the side of new buildings. This is of particular concern with narrow multifamily buildings, of which there are tens of thousands in NYC. In addition, the language “to the maximum extent practicable” will lead to inconsistent interpretation by the Department of Buildings and can cause more friction in complying with the requirement if ratified as written.

Comment 2

All newly constructed buildings greater than 100 feet in height must also provide six-foot-wide access pathways in accordance with the requirements of FC 504.5.

Projects on buildings greater than 100 feet already require ample access paths. Requiring all sides of taller buildings that have windows to have a 30 percent path that attaches to another path will eliminate available roof space, particularly on H-shaped or other non-rectangular buildings designed to maximize the number of windows for each unit. For example, the new regulations would require installers to eliminate several panels from the bottom left array in the diagram below.



Expanding the requirement for FDNY access pathways to buildings more than 100 feet in height will reduce the feasibility of installing solar on these properties, which would otherwise be required to install solar pursuant to LL 92/94. Prior versions of the Fire Code do not include any FDNY access pathway requirements for buildings greater than 100 feet in height. Our understanding is that such access pathways are not critical to the FDNY, as FDNY ladders are not long enough to access roofs greater than 100 feet in height.

Comment 3

Brooklyn SolarWorks requests that the 2021 Fire Code enshrine the allowance for solar panel installations on buildings with limited roof area first introduced in the 2014 revision (512.2).

Item 39 of the June 1, 2018 NYC Fire Code Guide makes it clear that this provision allows permanent building features (e.g., attic ventilators, bulkheads, chimneys, hatches, plumbing ventilation pipes, scuttles, skylights, and roof-mounted heating, air conditioning equipment, and other rooftop building service equipment) to encroach upon the clear path required by 504.4 to a limited extent on smaller buildings. In effect, 512.2 reduces the clear path required by 504.4 from six feet to four feet in some situations.

Brooklyn SolarWorks also respectfully requests that FDNY consider expanding the list of qualifying encroachments to include solar arrays, reducing the clear path requirement to four feet around our installations on buildings that qualify for the exception laid out in 512.2 (i.e., building rooftop has a width or depth of not more than 25 feet).

The interpretation guidance from 2018 has been crucial to our business, and allowed us to propose larger, more attractive systems on our customer's roofs. It has allowed Brooklyn SolarWorks to forego the expense and added delay of the FDNY variance review process on more than half of our projects. If this guidance is made explicit (and hopefully expanded) in the 2021 Fire Code, it will allow us to continue our work to meet the City's and New York State's solar PV and decarbonization goals.

Comment 4

The proposed change to D. 504.4.1.7: Barrier Requirements for Existing Buildings is:

> *The rooftop parapet or other perimeter railing or barrier shall be designed to facilitate the safe dismounting of a firefighter from an aerial ladder. Any such parapet, railing or barrier on a building constructed after the effective date, or installed pursuant to a work permit issue by the Department of Buildings after such date, shall be of substantial construction capable of supporting a minimum of 350 pounds (159 kg) and shall be designed with a level surface at least 5 inches in width (127 mm) so as to allow a firefighter to safely step on it, as prescribed by the department. Where the height of the rooftop parapet, railing or other enclosure is more than 48 inches (1219 mm), an approved landing platform and*

steps or ladder shall be provided to allow a firefighter to safely dismount and descend to the rooftop. Design and installation documents shall be submitted to the department for approval.

We strongly recommend eliminating the requirement for barriers to be greater than 5 inches in width for projects on existing buildings. The cost of installing perimeter barriers is already a major impediment to many solar projects. Where barriers need to be installed they should be substantial enough to provide blocking effect, but not provide structural stability for stepping. Should this requirement need to be enshrined, we suggest removing the clause ".. or installed pursuant to a work permit issued by the Department of Buildings after such date." This will put undue burden on solar projects and can kill retrofit projects.

Comment 5

Section FC608 outlines how Stationary Energy Storage [Battery] Systems (ESS) will be deployed in New York City. Expansion of battery systems will make solar installs more appealing to homeowners, therefore supporting the city's decarbonization goal. However, several provisions as written will severely limit or outright prevent the feasibility of installing Energy Storage Systems for any of Brooklyn SolarWorks existing customers. It is prohibitively difficult for our customers to comply with the following four subsections of FC608.

Section 608.9.4.1.1, concerning Below-grade locations, which reads:

Indoor systems shall not be installed below grade, except when approved by the department in a dedicated use building.

Section 608.9.4.1.2, concerning Sprinkler protection required, reads:

Indoor systems may be installed only in buildings fully protected throughout by a sprinkler system, except as otherwise provided in FC608.9.4.1.9. Control areas housing stationary energy storage systems shall be fully protected throughout by a sprinkler system designed in accordance with NFPA 15, except as may otherwise be approved based on equipment listings and testing results pursuant to FC608.4.

Section 608.11.1, concerning Remote monitoring of energy storage management system and reporting, which reads:

The owner of a stationary energy storage system shall arrange for data transmissions from the energy storage system's energy storage management system to be continuously monitored (on a 24/7 basis) by a remote monitoring facility staffed by trained and knowledgeable persons retained by the manufacturer or installer of the energy storage system. The remote monitoring facility shall, without delay, make all necessary notifications, as required by the rules and the emergency management plan, including notifications to the department, the certificate of fitness holder and the subject matter expert, in the event a stationary energy storage system installed in New York City exceeds or appears likely to exceed thresholds at which fire, explosion or other serious adverse consequences may result.

Section 608.11.2, concerning Central station monitoring of fire protection systems, which reads:

> *All fire protection systems protecting the stationary energy storage system installation, including any fire extinguishing system, and fire and gas detection or other emergency alarm system, shall be monitored by an approved central station.*

Special consideration should be given to installations under 20 kWh on one to four family homes. A below-grade space dedicated to housing such an energy storage system would not be designed for human occupancy, and should not be subject to the control area limitations in FC Table 5003.8.3.3. It is also not reasonable for one to four family dwellings to have sprinkler systems, 24/7 remote monitoring, or centralized fire protection systems. The buildings that Brooklyn SolarWorks installs generally do not house sprinkler systems as a requirement.

We ask that the Fire Code explicitly waive these four requirements for systems of this size. If that is not possible, we ask for time to propose alternative paths for smaller ESS systems on one to four family homes to comply with these new guidelines.

Comment 6

Brooklyn SolarWorks requests that FDNY confirm that our interpretation of 608.6.1, which concerns the Review and Approval of Indoor Systems, is correct.

The proposed revision of Section 608.6.1 reads:

> *Department review and approval of indoor system installations is required for systems utilizing equipment not approved by the department or not in accordance with the terms and conditions of the certificate of approval, equipment listing or requirements of this code. Otherwise, department review and approval is required only for battery management system monitoring stations, smoke control and smoke purge systems, explosion mitigation, and such fire protection and hazard mitigation systems and measures as are otherwise reviewed by the department under this code or the construction codes.*

Brooklyn SolarWorks interprets the above language to mean that where equipment has been issued a Certificate of Approval stating that the equipment is suitable for indoor installation, subject to conditions, a FDNY application for site specific review is not required, regardless of whether the system is a small, medium, or large battery storage system, as defined in the Rules, and provided that the system does not exceed the maximum capacity per control area as proposed in FC608.9.1.11.

Comment 7

Section 608.9.4.1.9 exempts lead acid and nickel-cadmium batteries used for emergency or standby power only from being installed in control areas designed as high-hazard occupancies.

That section reads:

> *Indoor systems shall be installed only in control areas designed, installed, operated and maintained in accordance with this section. The maximum aggregate rated energy capacity of indoor systems per control area shall be in accordance with FC608.9.1. The design and number of control areas per floor shall be in accordance with FC5003.8.3.3, including FC Table 5003.8.3.3, except that (subject to FC608.9.4.1.9 and FC608.9.4.1.10) each control area housing an indoor stationary energy storage system shall be designed and constructed as a high-hazard occupancy, and rooftop installations shall be treated as outdoor installations.*

This is similar to the existing exception in 2014 NYCBC 307.1, however 307.1 does not list a specific chemistry. Brooklyn SolarWorks believes that this is the correct approach, and that the FC 608.9.4.1.9 exemption should be extended to lithium-ion batteries as well, possibly subject to a size limit determined by the Department. Regardless of chemistry, battery systems used for emergency or standby power only experience dramatically fewer cycles than energy storage system batteries, and the hazards of thermal runaway or other thermal events are thus proportionately reduced.

Comment 8

Generally the proposed FC 2021 refers to all Lithium Ion batteries in the same category, and they all have the same requirements in table 608.9.1.1**.** However by grouping all lithium batteries into the same category it ignores the significant differences in thermal runaway characteristics. Cases like the APS battery fire in Arizona, referenced in the recent FC 2021 hearing were related to NMC lithium chemistry. Per DNVGL study conducted for on ed the LFP(Iron Phosphate) chemistry [is] has a significantly lower risk of thermal runaway to start with (see figure below). We respectfully suggests that the Lithium chemistry be further segmented, or differentiated so that the safer technology can be deployed more widely [because of less strict requirements] with a code that reflects safer batteries.

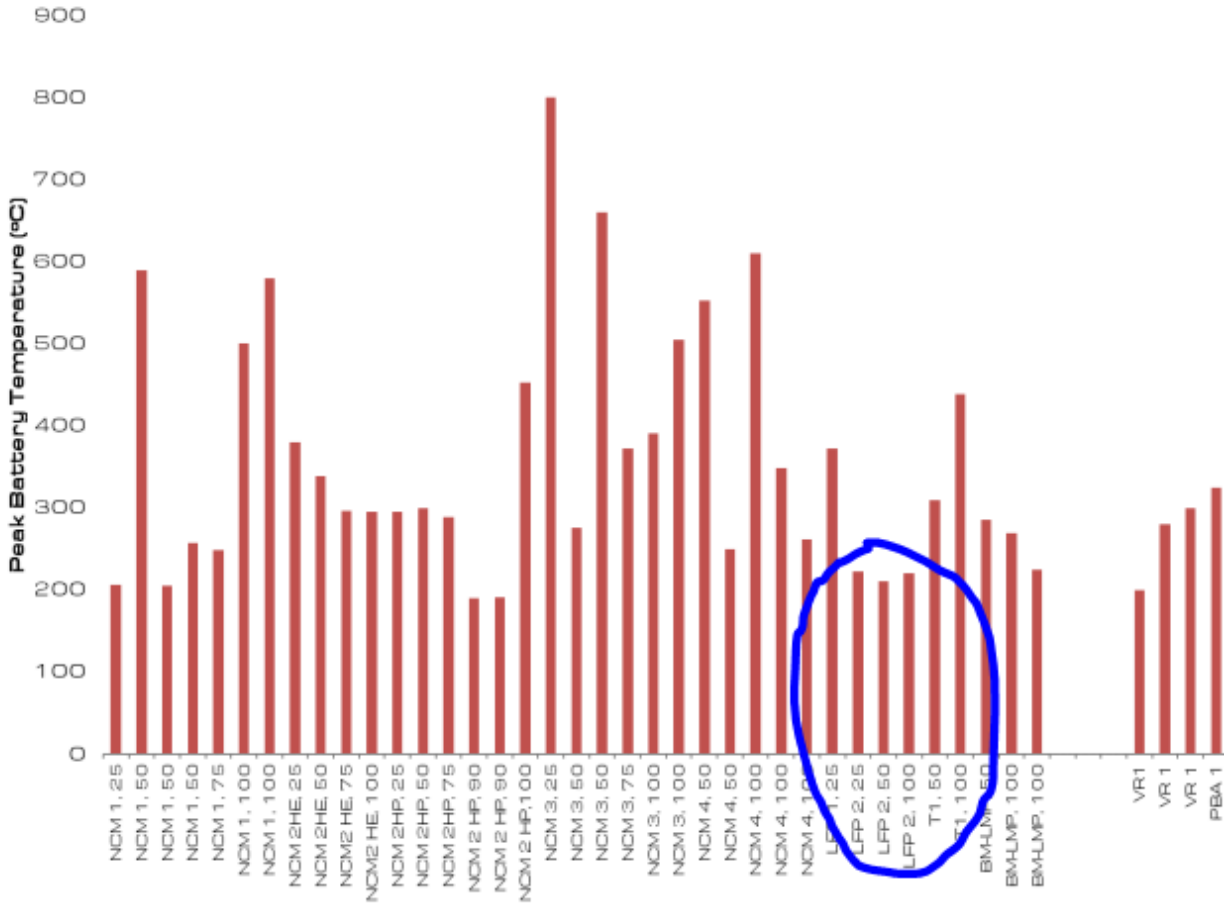


Figure 23 **It is generally true that LiFePO4, LTO, and BM-LMP batteries demonstrate lower than average temperatures during failure. The temperatures indicated for Pb acid and vanadium redox batteries is the peak heating temperature, as these electrolytes did not demonstrate flammable or exothermic properties as they were tested.**

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Brooklyn SolarWorks appreciates the opportunity to provide comments on this important matter and the FDNY's consideration of the above recommendations. Please contact our CEO T.R. Ludwig at tr@brooklynsolarworks.com with any questions.

Committee on Fire and Emergency Management

Testimony for November 1, 2021 meeting

Scott Lang – Honeywell International

Scott.lang@honeywell.com

Section 608.3

Section reads “608.3 Thermal runaway. VRLA and lithium metal polymer battery systems shall be provided with a listed device or other approved method to preclude, detect and control thermal runaway.” The correct term is not “lithium metal polymer,” but “lithium-ion.”

Section 2705.2.3.4 No. 6.1

Section reads “6.1. Automatic detection system: UV/IR, high-sensitivity smoke detection (HSSD) or other approved detection systems shall be provided inside each cabinet.” HSSD is a trademarked term of the Carrier corporation since 1992 for smoke detectors. The abbreviation should be removed from the document to avoid favoring one manufacturers equipment over another.

ESTABLISHED 2010

KINGS COUNTY DISTILLERY, INC.

WHISKEY DISTILLERS

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REGISTERED DISTILLERY
Nº. DSP-NY-15025

October 31, 2021

To The Members of the City Council:

I am the co-founder and head distiller of Kings County Distillery, the oldest and largest craft distiller in New York City.

I would like to speak in favor of the proposed NYFD fire code, which represents many hours of productive discussion between the business interests of New York City's distillers and the FDNY.

In general, I support this draft of the revised fire code, which will have a beneficial impact for safety of new distillers. It will also set a national standard for other jurisdictions to follow.

Still, I feel that in terms of that latter goal, there are still some aspects of the proposed code that need further revision. Specifically, in regards to the treatment of low-alcohol precursors (such as mash) and the failure to consider different tiers of flammability for various concentrations that may exist in a distillery, ventilation requirements which are onerous, and special electrical wiring requirements which are markedly stricter than international code. In short, this represents a very close to final draft, but I would request the council send this chapter back for final tweaks in order to make good on the promise to make a code that is both safe and actionable for anything other than the largest and most well-funded distillers.

I believe these are not large changes and the proposed code is largely fair, safe, and most importantly, will create a path to compliance for distillers of all sizes to operate safely in our city.

Sincerely,

Colin Spoelman
Co-Founder, President, and Distiller
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November 3, 2021

The Honorable Joseph C. Borelli
Chairperson
Committee on Fire and Emergency Management
New York City Council
New York, NY 10007

Submitted via City Council hearing registration/online testimony portal:

Dear Chairperson Borelli:

The National Elevator Industry, Inc. (NEII) is the leading trade association for companies that manufacture, install, and maintain elevators, escalators, moving walks, and other building transportation products. NEII members collectively represent approximately eighty-five percent of the work hours in the building transportation industry. On behalf of NEII, I write to convey our views on Int. No. 2430-2021, a local law to amend the New York city fire code and, specifically, on Section FC 511 of the proposed fire code concerning high-rise megastructure operations.

Section FC 511.8 addresses the regulation of access to elevator shafts in the high-rise megastructure environment. NEII has three concerns with the proposed provision. First, as drafted, section FC 511.8 appears to require emergency doors in all blind shafts ("each elevator hoistway", p. 209, line 6). This provision would conflict with section 2.11.1.2 of Appendix K of the building code recently adopted by the City Council and awaiting the signature of the Mayor. Appendix K requires emergency doors solely in single blind shafts. The conflicting provisions could cause confusion in design, construction, and enforcement. NEII recommends the Committee clarify the provision to align with the applicable provision of the building code.

Second, the language defining the placement of firefighter access to elevator shafts ("at least every 30 feet (9144mm) wherever the floor height of the surrounding space exceeds 30 feet (9144 mm)", p. 209, lines 6-7) is not clear. The language is similar, but not identical to, the language found in section 2.11.1.2 of Appendix K that requires such access every 36 feet or every three levels, whichever is less. NEII recommends the Committee clarify the provision to align with the applicable provision of the building code.

Third, the manner in which the provision is applied at the effective date could cause unnecessary delay and additional costs in construction. As drafted, section FC 511.8 requires the provision to apply to "buildings constructed after the effective date of this section" (p. 209, line 4). NEII recommends that the provision be amended to read "buildings permitted after the effective date

of this section" to provide surety and efficiency in the design review, approval, permitting, and construction processes.

As always, representatives from NEII and our member companies operating in New York city are available to discuss specific questions and to address technical matters as needed. NEII appreciates the commitment of the members of the Committee on Fire and Emergency Management to public safety. We look forward to working with the Committee and the City Council to develop a revision to the fire code that provides for the safety of the riding public and first responders.

Sincerely,

Philip W. Grone
Vice President, Government Affairs

1. SIMPLIPHI INITIAL GENERAL COMMENT:

Size, kWh capacity and voltage (48V vs 1000V DC) of a battery bank installation contributes significantly to the risk profile for any energy storage system (ESS). Size, capacity and voltage is not clearly specified throughout 608, including indoor vs outdoor.

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim

2. Per 608.9.4.1.9 Exceptions for certain battery systems for fire and life safety. Lead acid battery systems, and nickel-cadmium battery systems, and where approved by the certificate of approval based on their testing results, other types of energy storage systems, designed and installed solely for the purpose of supplying emergency or standby power for building fire safety and life safety systems in accordance with the construction codes and this code may be:

a. installed in buildings that are not protected throughout by a sprinkler system.

b. installed in buildings of combustible construction.

c. housed in control areas that are not constructed as high-hazard occupancies but meet such fire separation standards as may be set forth in the construction codes.

AND

Per 608.9.4.1.10 Exceptions for certain battery systems for business operations. The exceptions set forth in FC608.9.4.1.9 shall also be applicable to lead acid battery systems and nickel-cadmium battery systems, not exceeding a maximum aggregate rated energy capacity of 70 kWh per floor and where approved by the certificate of approval, other types of energy storage systems designed and installed for the purpose of supplying emergency power, standby power or uninterruptible power, for business operations, in accordance with the construction codes and this code.

SIMPLIPHI INITIAL COMMENT: Lead acid batteries should NOT be granted an "Exception" to this requirement as provided in section 608.9.4.1.10 for "business operations". They are highly toxic, volatile, outgas poisonous and flammable gases during normal operations (even without a fire or other catastrophic event), do not have a BMS (as lithium ion batteries do) that monitors and shuts down the battery. Giving special exception to lead acid batteries undermines the goal of these fire codes creating greater public and firefighter safety.

HEARING STATEMENT: How are other types of energy storage systems explicitly "approved by the certificate of approval based on their testing results"? Does this change from site to site, or is it product-specific?

3. 608.6.1 Indoor systems. Department review and approval of indoor system installations is required for systems utilizing equipment not approved by the department or not in accordance with the terms and conditions of the certificate of approval, equipment listing or requirements of this code. Otherwise, department review and approval is required only for battery management system monitoring stations, smoke control and smoke purge systems, explosion mitigation, and such fire protection and hazard mitigation systems and measures as are otherwise reviewed by the department under this code or the construction codes.

INITIAL SIMPLIPHI COMMENT: This requires more clarity. If batteries have UL 9540 and 9540A test data, how does this factor in the Certificate of Approval for "indoor systems"?

Revised FC2021: "Department review and approval of indoor system installations is required for systems utilizing equipment not approved by the department or not in accordance with the terms and conditions of the certificate of approval, equipment listing or requirements of this code. Otherwise, indoor system installations shall be reviewed and approved by the Department of Buildings in accordance with that agency's requirements, with department review and approval of energy storage management systems and monitoring stations, smoke control and smoke purge systems, explosion mitigation, and such fire protection and hazard mitigation systems and measures as are required to be reviewed by the department under this code or the construction codes."

HEARING STATEMENT (from initial comment): This requires more clarity. If batteries have UL 9540 and 9540A test data, how does this factor into the Certificate of Approval for "indoor systems"? This needs to be explicitly defined.

4. 608.8 Emergency Management Plan:

SIMPLIPHI INITIAL COMMENT: This is excessive for small and medium residential and commercial energy storage systems. The provisions are more applicable for larger systems. What is the threshold? Needs to be clear. 500 kWh or 1 MWh+ systems? This seems excessive for small and medium sized systems. There needs to be a distinction between small, medium and large. These requirements are appropriate for large ESS installations. Size, capacity and voltage present different risk profiles and need to be recognized in safety protocols.

Revised FC2021: not directly addressed

HEARING STATEMENT: This is excessive for small and medium residential and commercial energy storage systems. The provisions are more applicable for larger systems. A threshold needs to be defined; for example, applicable to energy storage systems with an aggregate capacity of 1 MWh or greater

5. 608.9.1.1 Indoor Systems FC Table 808.9.1.11

SIMPLIPHI INITIAL COMMENT: Object to lead acid of "all kinds" being pre-approved for "Maximum Aggregate Rated Energy Capacity (kWh) per Control Area of 600. Lead acid batteries outgas poisonous, flammable and highly volatile gasses whether they are in use or not. In addition, given their chemical composition, they represent a critical risk to first responders in a fire.

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim

6. 608.9.2 Energy storage management system monitoring. All stationary energy storage systems shall be designed with an energy storage management system that transmits data regarding energy storage system status and temperature to a remote monitoring facility or other approved location. Indoor systems shall be provided with approved remote monitoring stations at the building's fire command center and/or other approved location.

SIMPLIPHI INITIAL COMMENT: Is this required for systems <20kWh as well? If so, this appears to be unnecessary and adds significant cost to small systems, making them less commercially feasible.

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim. In addition:

- **Do the actual results and data from 9540A factor in per different chemistries, form factors and manufacturer in these requirements?**

- **If small and medium installations are equipped with batteries that do not catch fire or explode, and the forced thermal runaway per 9540A is limited and contained in the battery module, can this eliminate these requirements?**

7. 608.9.2 Fire protection and hazard mitigation. Stationary energy storage systems shall be designed to address the hazards identified by full-scale testing, including protecting the stationary energy storage system and the building or enclosure that houses such system with, as applicable, fire barriers, fire alarm systems, explosion mitigation, gas detection and other emergency alarm systems, fire extinguishing systems and ventilation systems.

SIMPLIPHI INITIAL COMMENT: Do the actual results and data from 9540A factor in per different chemistries, form factors and manufacturer in these requirements? If small and medium installations are equipped with batteries that do not catch fire or explode, and the forced thermal runaway per 9540A is limited and contained in the battery module, can this eliminate these requirements? Seems to override NFPA 855, 20 kWh small system requirements in which these protections were not required. Please address.

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim.

8. 608.9.4.1.2 Sprinkler Protection Required. Indoor systems may be installed only in buildings fully protected throughout by a sprinkler system, except as otherwise provided in FC608.9.4.1.9. Control areas housing stationary energy storage systems shall be fully protected throughout by a sprinkler system designed in accordance with NFPA 15, except as may otherwise be approved based on equipment listings and testing results pursuant to FC608.4.

SIMPLIPHI INITIAL COMMENT: Does this apply to small and medium systems? Is this regardless of the 9540A test results demonstrating there is no propagation throughout the entire battery module, much less module to module propagation?

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim.

9. 608.9.4.1.6 Ventilation. Control areas housing stationary energy storage systems shall be equipped with ventilation systems designed for high-hazard occupancies in accordance with the construction codes. Such ventilation systems shall be adequate to exhaust any flammable or other gases generated during the normal operation and/or failure of the stationary energy storage system.

SIMPLIPHI INITIAL COMMENT: If 9540A tests demonstrate that 25% or less LFL is maintained during forced TR and propagation, in which propagation is limited and contained within the module, does this apply. In addition, lead acid outgases during “normal operation”, so how can this battery technology be provided a pass?

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim.

10. 608.10.3 Notice to the Department. Notice of the commissioning and decommissioning of stationary energy storage systems shall be given to the department¸ and the removal of a malfunctioning system coordinated with the department, in accordance with the rules.

SIMPLIPHI INITIAL COMMENT: This provision seems overly burdensome for small and medium sized systems. If an inverter malfunctions, or a BMS shuts down in an LFP battery, does this require the fire department is on site "coordinating" the decommissioning?

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim. In addition: it is recommended to exclude the Notice to the Department for systems <20kWh

11. 608.11.1 Remote Monitoring of Battery Management System and Reporting:

SIMPLIPHI INITIAL COMMENT: The designation "remote monitoring facility staffed by trained and knowledgeable persons retained by the manufacturer or installer of the energy storage system…" to monitor on a 24/7 basis… needs to be clarified. No such monitoring facilities exist. Also, how does this requirement apply to small, medium versus large systems? The need for monitoring and the risk profile for large systems at higher voltages needs to be addressed within this requirement.

Revised FC2021 608.11.1: "Remote monitoring of energy storage management system and reporting. The owner of a stationary energy storage system shall arrange for data transmissions from the energy storage system's energy storage management system to be continuously monitored (on a 24/7 basis) by a remote monitoring facility staffed by trained and knowledgeable persons retained by the manufacturer or installer of the energy storage system. The remote monitoring facility shall, without delay, make all necessary notifications, as required by the rules and the emergency management plan, including notifications to the department, the certificate of fitness holder and the subject matter expert, in the event a stationary energy storage system installed in New York City exceeds or appears likely to exceed thresholds at which fire, explosion or other serious adverse consequences may result."

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim. In addition, it is recommended to remove 24/7 monitoring requirement of ESS <20kWh and those that show inherently lower hazards through 9540A testing.

12. 608.11.2 Central Station Monitoring of Fire Protection Systems. All fire protection systems protecting the stationary energy storage system installation, including any fire extinguishing system, and fire and gas detection or other emergency alarm system, shall be monitored by an approved central station.

SIMPLIPHI INITIAL COMMENT: Again, the requirement "shall be monitored by an approved central station" needs to be clarified. No such "central station" for distributed energy storage systems exist, particularly for small and medium sized systems (residential and commercial) distributed across homes and businesses. Size, capacity and voltage needs to be factored into these and all requirements – as does the actual data resulting from the 9540A tests that clearly provide performance profiles that are safe versus not safe.

Revised FC2021: not directly addressed

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim. In addition, it is recommended to remove 24/7 monitoring requirement of ESS <20kWh and those that show inherently lower hazards through 9540A testing.

13. 608.13 Group R-3 Occupancies 2.2:

SIMPLIPHI INITIAL COMMENT: This is ambiguous and is not being applied in a standardized manner. "No indoor system shall be installed in such a dwelling or attached garage except when authorized by its UL9540 listing based on the performance-cell level test requirements of UL9540A." If 9540 and 9540A tests have been conducted and a battery exhibits a safe profile (thermal runaway limited to cells heated and the two adjacent cells, limited propagation cell to

cell within a battery with hundreds of cells, drop in temperature, not continued rise of heat and propagation of TR to other cells) wouldn't these test results support "indoor systems installed" in a dwelling or attached garage? The manner that the 9540 and 9540A test results are being applied per the different safety profiles these tests provide are not reflected in the fire code stipulations throughout this document.

Revised FC2021: "2.1 No indoor system shall be installed below grade in such a dwelling or garage except when approved by the department.
"2.2 No indoor system shall be installed in such a dwelling except when approved for such installation by its certificate of approval based on a UL9540 listing meeting the performance-cell level test requirements of UL9540A, or other approved criteria."

HEARING STATEMENT: above comment was not addressed by latest version of FC2021 and can be reiterated verbatim.

Reset/Clear Form

Fire Department – City of New York

2021 Fire Code Revision Project

Public Comment Form

Instructions for Public Comment Form

This form is a convenient way for the public to provide written comments on proposed Fire Code changes. Anyone may complete this form and send it electronically to the Fire Department by clicking "Submit" at the bottom of this page. Alternatively, completed forms and public comments (especially lengthy submissions that exceed the allowed 1,000 word count) may be emailed to the Fire Department at code.develop@fdny.nyc.gov.

Section I – Person or Organization Submitting Public Comment

Please include your name. All other information is optional. Contact information is requested in case we have questions and seek additional information about your comments.

1. Name: S. Gilbert
2. Organization/Affiliation: Superior Protection Services
3. Email address: slgsuperior@mindspring.com
4. Telephone Number: 516

Section II - Public Comment

Please submit a separate comment for each topic. Indicate the Fire Code sections applicable to your comment.

Important! When submitting comment on a specific Fire Code section, please specify the **proposed** Fire Code section number (which may differ from the existing Fire Code section number).

5. Proposed FC Section Number: 907.20.5.1 & 908.5.1
6. Topic of comment: Five year test for Fire Alarm & Emergency Alarm Systems
7. This comment is submitted (*check one)*:
   - ☐ In Support of Proposed 2021 Fire Code Provision
   - ☑ In Opposition to Proposed 2021 Fire Code Provision
8. Comments on Proposed 2021 Fire Code Provision:

This newly proposed requirement for a Five year test for Fire Alarm & Emergency Alarm Systems is truly unnecessary in all aspects. First of all based upon who can verify and do this it is very subjective. The alarm technician who is approved to do this is most likely the one who has been testing these systems for the years prior would be doing this and is not going to find fault with the prior inspections done therefore not accomplishing anything. Secondly the Fire and Building Codes of NYC have adapted a version of NFPA 72 Chapter 14 that states exactly what testing has to be done on a yearly basis which is the same that would be done on every fifth year anniversary. Inspections are not done any less capacity annually than this proposed code would justify the need for. Additionally since NYC is attempting to fall in line with the rest of the country where this is not required and now becomes an exception for NYC.

Submissions are limited to approximately 1,000 words. Lengthier submissions may be emailed to: code.develop@fdny.nyc.gov.

By submitting my comments above, I hereby grant and assign to the City of New York any and all rights (including but not limited to copyright or other intellectual property rights) to use my concept or verbiage, and I understand that I acquire no rights in any publication of the New York City Fire Code in which this comment in this or another similar or analogous form is used.

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2021 Fire Code Revision Project

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Section I – Person or Organization Submitting Public Comment

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1. Name: S. Gilbert
2. Organization/Affiliation: Superior Protection Services
3. Email address: sgsuperior@mindspring.com
4. Telephone Number: 516

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Important! When submitting comment on a specific Fire Code section, please specify the **proposed** Fire Code section number (which may differ from the existing Fire Code section number).

5. Proposed FC Section Number: 907.4.2 Fire command center printer
6. Topic of comment: Additional alternatives in addition to a printer
7. This comment is submitted (*check one)*:
   - [x] In Support of Proposed 2021 Fire Code Provision
   - [ ] In Opposition to Proposed 2021 Fire Code Provision
8. Comments on Proposed 2021 Fire Code Provision:

Apparently it have been determined that for easy access to the fire alarm event history that this item consisting of a printer is being added to the Fire Code. There are some concerns to consider here in order to accomplish the intent as well as keep up with the changing times. Most printers are single sheet feed and when calling up event histories it can be lengthy and cumbersome to review it as a printed document. There should be alternatives in addition to that such as a large display screen that can display the history prior to printing to be used for the refining of the report. Another acceptable alternative should be to be able to display the event history on a computer, cell telephone or tablet as a possible current or future alternative. Why limit the possibilities now and in the near future by not including this in the code?

Submissions are limited to approximately 1,000 words. Lengthier submissions may be emailed to: code.develop@fdny.nyc.gov.

By submitting my comments above, I hereby grant and assign to the City of New York any and all rights (including but not limited to copyright or other intellectual property rights) to use my concept or verbiage, and I understand that I acquire no rights in any publication of the New York City Fire Code in which this comment in this or another similar or analogous form is used.

Submit

November 1, 2021

Chair Joseph Borelli
Committee on Fire and Emergency Management
New York City Council

Subject: Intro 2430; A Local Law to amend the New York City Fire Code

UL appreciates the opportunity to provide comments to the City Council in relation to the proposed Local Law to amend the New York city fire code.

Since its inception in 1894, UL serves a mission of promoting safe living and working environments for people everywhere. Grounded in science and collaboration, UL's work empowers trust in pioneering and innovative new technologies, from electricity to the internet. We help innovators deliver safer, more secure products and technologies through a wide range of research, standards development, testing and certification services that enable the safe adoption and use of these new technologies.

UL values the long-standing collaborative relationship it has with the FDNY and we would like to recognize and commend its fire prevention bureau staff, along with the many volunteer subject matter experts, that worked on this update to the NY City Fire Code.

In general, fire and building codes need periodic review and updates to align with the national model codes that are updated on a three year cycle. These code updates serve as an opportunity to incorporate appropriate safety provisions that address new and innovative products, construction materials and methods to ensure that public safety concerns are addressed. This Bill revises the current fire code, commonly referred to as the "2014 Fire Code", with new fire and life safety requirements that mitigate fire hazards identified since the current (2014) fire code was adopted by the City Council. The updated fire code will add safety requirements for new technologies being deployed in NY City, such as lithium-ion battery energy storage systems and e-Mobility devices such as electric scooter and e-bikes that are also powered by lithium-ion batteries. Improper charging of these e-Mobility devices has been linked to numerous fires in NY City and nationwide, causing injury, death and significant property damage.

The new 2021 NY City Fire Code will add seventeen new references for UL standards that provide for the safety, performance testing and certification of various products, fire protection and life safety systems installed or used in the built environment. Systems and equipment covered through third-party certification, performed by approved testing laboratories to recognized safety standards, provides a reasonable assurance for the electrical and fire safety of those devices. Standards for product safety, such as those published by UL, holistically and effectively address the safety of emerging technologies.

Thank you for the opportunity to comment on the proposed rule. Please do not hesitate to contact me if you have any questions regarding this submission or would like additional information with regard to UL or the UL standards referenced in this proposed Local Law which updates the NY City Fire Code.

Sincerely,

Bruce E. Johnson

Bruce E. Johnson
Regulatory Services Regional Manager
Codes and Regulatory Services
UL, LLC

Bruce.Johnson@ul.com

November 3, 2021

Joseph C. Borelli, Chair
New York City Council
Committee on Fire and Emergency Management
City Hall
New York, NY 10007

Re: Comments to the Amendment to New York City Fire Code dated October 13, 2021 ("Fire Code Amendments")

Honorable Chair Borelli:

On behalf of the DISH Wireless L.L.C. ("DISH"), I respectfully request that prior to a vote on the Fire Code Amendments, dated October 13, 2021, that you and the FDNY's Chief of Technology Management or FDNY's counsel, Julian Bazel, meet with DISH to discuss the impact and implications of this new proposed rule.

I oversee the deployment of the DISH wireless network in New York City. DISH is a FCC-licensed provider of wireless services and a new entrant into the market. DISH has made enforceable commitments to construct and offer 5G broadband service to at least 70% of the population of the United States by June 2023. To reach this ambitious milestone, we plan to deploy our network in New York City and the surrounding tri-state area. Our successful deployment in New York will create jobs for New Yorkers with regards to installation, construction and retail, and will provide affordable telecommunications services to facilitate better access to emergency services, healthcare, classrooms and greater connectivity overall.

However, a delay in meeting the FCC-mandated buildout schedule is likely to subject DISH to a significant monetary penalty, and potentially result in a loss of DISH's wireless spectrum in New York City. This would jeopardize affording New Yorkers the benefits of a new entrant into the wireless market.

DISH is planning to build between 900-1200 sites in New York City by June of 2023. So far, DISH has entered into over 100 leases for rooftop wireless installations and is actively negotiating many more. This year we estimate submitting more than 600 applications to FDNY. As a result of our volume and timeline demands, DISH is disproportionately impacted by the proposed FDNY regulatory requirements.

DISH has no control over existing installations owned or operated by other carriers. DISH has no preexisting wireless rooftop installations, and has every incentive to comply with the Fire Code. If DISH is forced to bring other carriers' existing facilities into compliance, the resulting delays would cause DISH to be at risk of not being able to meet its buildout milestones.

To help facilitate our buildout in a timely manner, DISH respectfully requests clarification on the last Section of 504.4.10.3 of the proposed Fire Code Amendments. DISH believes use of the word "certification" as opposed to "documentation" would avoid confusion as to what constitutes sufficient documentation. Additionally, a certification of compliance with FCC requirements would meet the intent of the FDNY proposed code change to ensure that telecommunications carriers are meeting radio frequency (RF) emissions standards of safety.

We would welcome the opportunity to have a meeting with you to discuss this at your earliest convenience. Please contact me at 973-756-7610 or mike.mcgovern@dish.com.

Respectfully submitted,

Mike McGovern, Regional Vice President

On behalf of DISH Wireless L.L.C.

New York City Council
Committee on Fire and Emergency Management
250 Broadway
New York, NY 10007
October 27,2021

Dear members of the Committee on Fire and Emergency Management,

My name is Gabriela Samayoa, I am a New York City resident, an advocate for youth nutrition and food access, as well as one of your constituents.

According to a recent US Department of Agriculture (USDA) report, in 2018, about 11.1% of US households experienced food insecurity at least part of the time, which equates to 37.2 million people, including 11.2 million children .According to Feeding America, a healthcare emergency like the current COVID-19 pandemic has complicated food insecurity among children, as the estimated number of food-insecure kids could jump from 11 million to an estimated 18 million .A fundamental cause of this food insecurity is the disruption to daily school meals which support school-aged children. *Bill Int 2057-2020: establishing an emergency student food plan* seeks to create a lasting solution to the food insecurity children experience during any emergency where schools are mandated to close.

NYC serves approximately 230 million meals and snacks a year at schools. When schools close due to an emergency, like the current pandemic COVID-19, food-insecure children who rely upon school meals are left without a consistent access to healthy food. For many students, school meals make up one-third to one-half of their caloric intake for the day. As a result, food-insecure children are at increased risk for developing obesity and diabetes, two of the most common comorbidities associated with COVID-19. In addition, children who live in homes facing food-insecurity are more likely to experience emotional distress, decreased quality of life, and worse academic performance.

NYC's food system has undergone many similar emergencies such as 9/11, Hurricane Sandy, the 2008 Great Recession, and now the COVID-19 pandemic. The fundamental causes of food insecurity are persistent poverty rates, high numbers of low-wage workers, a limited public food sector, and growing income and wealth inequality. If these problems persist, food insecurity will remain, and it will grow worse when an emergency creates economic challenges and public health problems. So, during an emergency, vulnerable populations like immigrants, small food business owners, food workers, and *children* who exist in households below the federal poverty level who rely on schools for the bulk of their meals, would have to affront in addition food-insecurity problems.

During the current COVID-19 pandemic response, New York laid out a much-needed plan for residents to access free grab-and-go breakfasts and lunches from schools, groceries from food pantries, and prepared meals for seniors and medically vulnerable individuals through the newly launched GetFoodNYC initiative. Yet, despite these efforts, the food insecurity among NYC residents had grown from 1.2 million pre- COVID-19 to nearly 2 million people. These facts

highlight how important it is to develop a food-specific emergency plan for natural disasters, pandemics, and economic downturns ahead of time.

It is a reality that NYC will continue to face many more emergencies, but we must start planning, and this Bill Int 2057-2020 is the first step in making a positive change to secure food for the children who are the future of our society. The Bill is a local law that would amend the administrative code of the city of New York that would establish an emergency student food plan. The Mayor's Office of Food Policy in a coalition with the NYCDOE, and OEM would produce an emergency student plan. provides students with breakfast, lunch, and dinner if City schools are instructed to close by the governor, mayor, or chancellor and when the DOE uses any form of remote learning. I ask you to take assertive action to advance this bill and urge you and your fellow members of the Committee on Fire and Emergency Management to vote yes on Int. 2057-2020.

Thank you in advance for your time and attention to this important issue affecting our children and their families of NYC, I look forward to your immediate attention to this critical public health issue.

Regards,
Gabriela Samayoa

"By failing to prepare, you are preparing to fail."
― Benjamin Franklin

November 4, 2021

New York City Council
New York City Hall
250 Broadway
New York, New York

Mr Chairman-

Thank you for the opportunity to testify before your committee on November 1st. This letter follows up on our comments and makes concrete proposals on ways in which we believe the proposed fire code could be improved to maintain public safety and allow our businesses to continue to exist and provide jobs and revenue to the city.

In order for small craft distilleries to be viable and successful in New York City, we need to find the most cost-effective way to mitigate hazards and operate in a safe manner. As we noted in our oral testimony, more than a dozen distilleries have operated without a single accident over more than 10 years of operation. One of the great steps of this code is this notion of building, maintaining and certifying expertise in the distillery. There is a plan required, there are certificates of fitness. We believe that with this knowledge and thorough planning distilleries can be safe without excess regulation. Throughout our requested changes to the proposed fire code, we would like to advocate a less prescriptive approach in favor of an approach that allows design professionals to work with the distilleries and the fire department to build systems that are well designed and safe for our staff and the public.

I have attached an annotated markup of the code with proposed changes. This is an explanation of our requested changes.

4003.3 MAQ. Current code does not differentiate between the relatively modest hazard of a liquid that is 35% alcohol and a liquid which is significantly more hazardous at 95% alcohol. This code is an opportunity to set forth a new way of looking at beverage alcohol that will encourage distillers to operate their distilleries in a safer manner. Currently, if you have a limit on the amount of alcohol you can have on premise, it is in the distilleries best interest to keep that alcohol concentrated in order to keep the volume lower therefore maintaining the MAQ. If MAQ was based in part on concentration of alcohol, then it would encourage a distiller to dilute that concentrated alcohol down to a concentration that is less hazardous and easier to work with. The current proposal from the FDNY specifies regulating “mash … under 10%”. Liquid under 15% alcohol is not currently regulated and should not be regulated here as it has no hazard. We would propose allowing an additional volume of alcohol between 15% and 35% which would give distilleries a comfortable envelop to work within while maintaining a safe environment.

4003.4.2 See discussion below regarding electrical and exhaust ventilation below. The provisions of this section would be extraordinarily costly to a distillery which needed to work within a combined fire area. The proposed edits would effectively mitigate risk and not be overly costly to the businesses.

4003.7 The requirements of FC5004.3.1 is very burdensome in its breadth. Current practice under the international fire code requires exhaust ventilation only in situations in which vapor would exist under normal operations. Most areas of the distillery would normally be ventilated to .15 CFM/ft2 according to code. By prescribing that all distilleries be ventilated to the higher standard throughout, the cost to comply would be prohibitive. A less prescriptive approach and a more case by case approach managed by a design professional would create safe environments without undue burden. There are numerous studies which demonstrate that the level of alcohol vapor from barrel storage does not rise to the level of hazard. Mechanical ventilation of barrel storage is both financially prohibitive and physically detrimental to our product/process. It is industry standard throughout the world NOT to ventilate barrel storage to the level of FC5004.3.1.

4003.8 Class 1 Div 1 wiring throughout the distillery is unnecessary for safety and is very costly for small distilleries. The limits outlined in Table 5703.1.1 clarifies the classified areas. Eliminating the term 'throughout' clarifies the application of the table.

4003.10 Requiring environmental controls in a manufacturing environment like distilling will put an unnecessary burden and expense on most distilleries. Distilleries around the world operate in ambient temperature. The Distillation room in particular is always, across all segments of the industry, HOT. Since part of the process is to get the alcohol boiling hot, it seems clear that other methods to make the area safe are more appropriate. Eliminating hazardous electrical connections and requiring ventilation are both good methods of mitigating hazards around the still.

In the storage area, where vessels are sealed and no production or processing activities are being conducted, environmental controls would be costly, potentially detrimental to product quality and not significantly increase safety.

4003.11 Backup of "Exhaust" Ventilation is an important distinction.

4004.5.1 This requirement for such a specialized piece of equipment is excessive. A boiler manufacturer works with the FDNY in hopes of selling thousands of units in NYC. BEST CASE scenario for a still manufacturer is to sell 1 or 2 units. It's further complicated by the distinct possibility that a distillery might want to purchase a used still in which case the manufacture would not want to get involved. The incremental cost associated with this certification could potentially double or triple the cost of equipment for NYC distillers, and eliminate otherwise excellent choices. Reducing choice and driving up the cost of stills would put NYC distiller at a significant competitive disadvantage, if they could afford to operate at all. As we have

recommended, the engineer on record can sign off on the safety elements of stills installed to the same effect.

4005.2.5 Finished goods should not be restricted. Many industry studies have found that finished goods reflect a much lower hazard than bulk stored goods. In every other jurisdiction, packaged goods fall under the regulation of consumer goods once they are packaged. Limiting finished goods to 2 pallets will put significant challenges on distillers without additional safety. It also multiplies the number of truck trips necessary to ship finished goods out. If a distillery, for instance, produces 8 pallets of finished goods for a given order this regulation would push the distillery toward 4 truck pickups on 4 different days instead of one pickup, multiplying both costs and the neighborhood burden.

4005.3.1 An industry standard method of storing barrels is to palletize the barrels and stack them on pallets. Prohibiting this method of storage dramatically increases costs and reduces the ability for a distiller to age product in a cost-effective manner.

4006.8 combustible materials. It is common practice in the distilling industry to bring pallets of bottles into the bottling area in advance of a bottling run. Craft distilleries in particular need to do this because most distilleries are purchasing packaging products in a “Just In Time” manner. We would like to suggest that if the still is in an area, bulk materials should be allowed in the bottling area.

4006.12.3 See comments for 4003.10

4007.3 - storage of grain While we agree with most of your provisions of the combustible grain section of the code, there are some provisions regarding the storage of grain which seem excessive. Grain stored in sacks or bags seems like something without hazard. The hazard involves the emptying of the sacks. We would request that the references to storing grain be removed.

Sincerely,

Daric Schlesselman
Vice-President
New York State Distillers Guild

[2906.6.4] 3706.6.4 Portable fire extinguishers. The combustible fiber storage area shall be provided with portable fire extinguishers in accordance with FC906 governing extra-high hazards (Class A fires).

[2906.7] 3706.7 Storage and handling. Bales of combustible fibers facing aisles shall be covered on top and sides with tarpaulins or other suitable covering. Whenever possible, the combustible fibers shall be stacked on one side of the waterfront structure only, preferably at the water end of waterfront structure. Combustible fibers shall be tiered no higher than 12 feet (3658 mm) and a clearance of not less than 18 inches (457 mm) between the sprinkler head and the upper level of the top tier shall be maintained. An aisle space of not less than 5 feet (1524 mm) extending to the side of the waterfront structure shall be provided at right angles to the main aisle at intervals not exceeding 75 feet (22 860 mm) in the combustible fiber storage area.

[2906.8] 3706.8 Operation and maintenance. Waterfront structures upon which combustible fibers are stored or handled shall be operated and maintained in compliance with the requirements of FC [2906.8.1] 3706.8.1 through [2906.8.3] 3706.8.3.

[2906.8.1] 3706.8.1 Fire guard. A fire guard shall be required and positioned approximately every 200 feet (60 960 mm) throughout the length of the combustible fiber storage area. Persons conducting a fire watch shall have the duties and responsibilities set forth in FC901.7.2.1 with respect to the areas being monitored in connection with combustible fiber storage, and shall be familiar with the location of fire alarm manual pull stations, and standpipe system hose and hose connections in the area.

[2906.8.2] 3706.8.2 Access. Access to combustible fibers and the aisles between the stored combustible fibers shall be restricted to personnel handling the combustible fibers, fire guards and representatives of the department.

[2906.8.3] 3706.8.3 Loading and unloading. When loading and unloading combustible fibers, two persons shall be assigned to each loading or unloading operation to stand by with the standpipe hose. These persons shall be instructed as to the location and use of the standpipe system valves and hoses.

CHAPTERS 38 AND 39 RESERVED

CHAPTER 40 DISTILLERIES

SECTION FC 4001 GENERAL

4001.1 Scope. This chapter governs the design, installation, operation and maintenance of distilleries, including the manufacturing, storage, handling and use of distilled spirits in such facilities. Storage of distilled spirits in a warehouse or a liquid storage warehouse that is not a

distillery is governed by FC5704.3. Any occupancy with ancillary distillery operations is a distillery regulated by this section.

4001.2 Permits. Permits shall be required as set forth in FC105.6.

4001.3 General. The design, installation, operation and maintenance of distilleries, including the manufacturing, storage, handling and use of distilled spirits, shall be in accordance with this chapter. Nothing contained in this chapter shall authorize operations or facilities in contravention of Federal, State and City laws, rules and regulations governing distilled spirits, including the regulations of the Tax and Trade Bureau of the United States Treasury Department and the New York State Liquor Authority.

4001.4 Acceptance testing. Prior to commencement of distillery operations:

1. The still and all piping associated with alcohol processing equipment shall be inspected and tested by, or in the presence of, a certificate of fitness holder at the time of installation to ensure that the equipment is in good working order; and

2. Electrical wiring, equipment and installations shall be installed in accordance with the construction codes, including the Building Code and the Electrical Code.

4001.5 Prohibitions. It shall be unlawful to:

1. Store more than 20,000 gallons (75 700 L) of alcohol in any distillery.

2. Store barrels at a height where the top of the storage is more than 12 feet (3658 mm) above the floor in a distillery.

3. Conduct distilling, alcohol processing or bottling above the second floor of any building, or in any basement, cellar or other below grade location, except as authorized by the department.

4. Establish or operate a distillery in any building housing a Group E, R-2 or I occupancy, or in which Group A occupancy is the dominant occupancy, except as authorized by the department.

4001.6 Supervision. Distilleries and distillery operations shall be under the supervision of a certificate of fitness holder, as follows:

1. Still operation, and periodic testing of stills, shall be personally conducted by a certificate of fitness holder.

2. Distillery equipment other than stills shall be operated under the personal supervision of a certificate of fitness holder.

3. All other distillery operations, including the storage of raw alcohol and distilled spirits, shall be under the general supervision of a certificate of fitness holder.

4. The installation, alteration, repair or servicing of stills and other distillery equipment shall be conducted under the personal supervision of a still installation certificate of fitness holder or other person with approved qualifications.

4001.7 Other alcohol products. Manufacturing, storage, handling and use in a distillery of alcohol products that are not raw alcohol or distilled spirits shall comply with the requirements of FC4007.

4001.8 Very low flammability. Any distillery that exclusively manufactures, stores, handles and uses beverage alcohol that is a Class I liquid with an alcohol content by volume of 20 percent or less (including raw alcohol, process alcohol and finished products) may apply to the Department to be exempted from design and installation requirements of this chapter.

4001.9 Combustible dust. Any distillery that generates combustible dust shall comply with the requirements for combustible dust-producing operations set forth in FC Chapter 22 and this chapter.

4001.10 Emergency response plan. Each distillery shall prepare and maintain an emergency response plan to address fires; spills, vapor releases and other accidental discharges; and distillery equipment alarms. Distilleries may utilize emergency plans developed in compliance with OSHA or New York State Department of Labor regulations, provided that they address all matters required by this chapter. The certificate of fitness holder shall train all distillery staff to implement such emergency response plan, including appropriate mitigating and reporting actions necessitated by fire, leak or spill.

SECTION FC 4002 DEFINITIONS

4002.1 Definitions. The following terms shall, for the purposes of this chapter and used elsewhere in this code, have the meanings set forth in FC202.

ALCOHOL STORAGE AREA.

BEVERAGE ALCOHOL.

Distilled Spirits.

Finished Goods.

Process Alcohol.

Raw Alcohol.

CHEMICAL STORAGE BUILDING.

DISTILLED SPIRITS PROCESSING AREA.

DISTILLERY.

Small Distillery.

Medium Distillery.

Large Distillery.

DISTILLERY EQUIPMENT.

Alcohol Process Tank.

Closed Alcohol Process Tank.

Open Alcohol Process Tank.

Alcohol Storage Equipment.

Barrel.

Intermediate Bulk Container.

Alcohol Storage Tank.

Still.

DISTILLERY OPERATIONS.

Alcohol Processing.

Bottling.

Distilling.

DISTILLERY SERVING AREA.

DISTILLERY WASTE PRODUCTS.

SECTION FC 4003 DESIGN AND INSTALLATION REQUIREMENTS FOR DISTILLERY FACILITIES

4003.1 General. The building housing a distillery shall be designed and installed in accordance with this section. Design and installation documents shall be submitted for department review and approval.

4003.2 Occupancy type. Distilleries shall be housed in buildings and occupancies with the following occupancy classifications:

1. A small distillery shall be located in a building or space designed as an F-1 factory occupancy as set forth in FC4003.4.1. Such factory occupancy may be located in a mixedoccupancy building, except as otherwise provided in FC4001.5(4).

2. A medium distillery shall be located in a high-hazard occupancy, as set forth in FC4003.4.1, in a building in which Group F occupancy is the dominant occupancy

3. A large distillery shall be located in a separate building or in a detached building, which is classified as a high-hazard occupancy.

4003.3 Maximum allowable quantity. The maximum allowable quantity of alcohol, of any type, shall not exceed the amounts set forth in FC4003.3.1 through 4003.3.3, except as authorized by the department.

4003.3.1 Small distillery. The maximum allowable quantity in a small distillery shall be 750 gallons (2839 L) per control area. An additional 1,500 gallons (5678 L) of other beverage alcohol precursors, with an alcohol content by volume between 15% and 34%, may be stored, handled or used per control area.

4003.3.2 Medium distillery. The maximum allowable quantity in a medium distillery shall be 2,000 gallons (7570 L) per control area. An additional 4,000 gallons (15 140 L) of other beverage alcohol precursors, with an alcohol content by volume between 15% and 34%, may be stored, handled or used per control area.

4003.3.3 Large distillery. The maximum allowable quantity in a large distillery shall be 4,000 gallons (15 140 L) per control area. An additional 8,000 gallons (30 280 L) or other beverage alcohol precursors, with an alcohol content by volume between 15% and 34%, may be stored, handled or used per control area.

4003.4 Fire separations. Except as otherwise provided in FC 4003.4.1 and 4003.4.2, a minimum of 1-hour fire barriers or horizontal assemblies, or both, constructed in accordance with the Building Code, including self-closing doors, shall be installed to separate the following distillery operations from each other:

1. Distilled spirits processing areas.

2. Alcohol storage areas, except barrel storage.

3. Barrel storage areas.

4. Distillery serving area.

5. General business operations area and/or finished goods storage in excess of 250 gallons (946 L).

6. Other alcohol production areas.

4003.4.1 Factory and high-hazard areas. The distilled spirits processing areas, alcohol storage areas and barrel storage areas shall be constructed, in small distilleries, with the fire barriers and horizontal assemblies required for a factory occupancy, and, in medium distilleries, with the fire barriers and horizontal assemblies required for a high-hazard occupancy.

4003.4.2 Combined fire areas. The distilled spirits processing areas, alcohol storage areas, barrel storage areas and other alcohol production areas may be located in a single fire area subject to the following requirements:

1. The total quantity of alcohol stored, handled or use in the fire area is limited as follows: 1,000 gallons (3785 L) in a small distillery; 2,000 gallons (7570 L) in a medium distillery; 4,000 gallons (15 140 L) in a large distillery, and a maximum allowable quantity of twice that amount for beverage alcohol with an alcohol content by volume between 15% and 34%.

2. Barrel storage shall not be located more than 6 feet (1829 mm) above the floor. The barrel storage area shall be separated by a wall, bollards or other approved separation designed to minimize the risk from rolling barrels.

3. Anywhere flammable vapor/air mixtures could exist under normal operations shall be provided with emergency alarm detection and mechanical exhaust systems in accordance with FC4003.5.3 and 4003.7.

4. Electrical wiring and equipment in accordance with FC4003.8.

5. Grain mashing and fermenting may be conducted in such combined fire area. All grain conveyance shall be in enclosed containers or systems. A combustible dust collection system shall be provided for any unenclosed grain handling. No grain milling shall be conducted in such combined fire area.

6. Additional quantities of alcohol shall be stored in a listed and approved chemical storage building within the space, at an approved location, or in a separate fire area.

4003.5 Fire protection systems. Fire protection systems shall be provided in accordance with FC 4003.5.1 through 4003.5.3.

4003.5.1 Sprinkler system. Distilleries shall be protected throughout by a sprinkler system designed in accordance with the Building Code. The sprinkler system in a small distillery shall be designed to be of an extra hazard type. The sprinkler system in a medium or large distillery shall be designed for a high-hazard occupancy. Sprinkler systems for high-piled barrel storage

shall comply with the sprinkler requirements for such storage systems in accordance with FC3206.4. Sprinkler systems for distilleries producing combustible dust shall comply with the sprinkler requirements of NFPA 652.

4003.5.2 Fire alarm system. Distilleries shall be provided with a manual and automatic fire alarm system. If the fire alarm system is part of a building system that provides protection to other occupancies, a separate sprinkler water flow device shall be provided for the distillery occupancy, except in a small distillery equipped with a smoke detection system. Such fire alarm system shall activate alarm notification devices throughout the distillery and be monitored by a central station.

4003.5.3 Emergency alarm system. Distilleries shall be provided with a gas detection system designed to detect flammable vapors in accordance with FC908. Such emergency alarm system shall activate alarm notification devices throughout the distillery.

4003.6 Explosion control. Medium and large distilleries shall be provided with explosion control designed in accordance with FC911 to mitigate the impact of an explosion.

4003.7 ventilation. A ventilation system designed in accordance with the Mechanical Code shall be installed throughout the distillery. Exhaust ventilation designed in accordance with FC5004.3.1 and the Mechanical Code shall be provided whereever flammable vapor/air mixtures could exist under normal operations..

4003.8 Electrical wiring and equipment. Electrical wiring and equipment shall be installed in accordance with the Electrical Code. Class 1, Division 1 electrical wiring and equipment shall be provided accordance with FC Table 5703.1.1 in the distilled spirits processing areas and alcohol storage areas, except that where a closed system as defined in FC202 is being utilized in a distilled spirits processing area or alcohol storage area, electrical wiring and equipment shall be provided as follows:

1. Class 1, Division 1 and Class I, Division 2 electrical wiring and equipment in accordance with FC Table 5703.1.1 (for indoor equipment where flammable vapor/air mixtures could exist under normal operations); and

2. Class 1, Division 1 electrical wiring and equipment in pits and behind containment barriers where flammable vapor cannot dissipate horizontally; and

3. Class 2, Division 1 electrical wiring and equipment in any other area where combustible dust may be present.

4003.8.1 Lighting. Distilled spirits processing areas, excluding barrel storage areas, shall be well lighted to facilitate safe operation of distillery equipment and visibility of signage.

4003.9 Mechanical equipment. All stationary and portable electrically-powered and/or heat-producing devices, equipment and systems, including space heating and cooling systems; mechanical refrigerating systems; and conveyers, installed or used in a distilled spirits processing

area or alcohol storage area shall be suitable for a classified location in accordance with the Electrical Code, the Mechanical Code and NFPA 30, as applicable, except where all alcohol handling is in a closed system or where an explosion mitigation analysis indicates that the equipment is outside of the classified area. No mechanical equipment with burners, or using other flames or exposed electrical elements, shall be installed or used in distilled spirits processing areas and alcohol storage areas. Air-driven power tools shall be used whenever practicable instead of electrical tools; when electrical tools must be used, no distilling, alcohol processing or bottling operations shall be conducted and the control area shall be clear of any flammable vapors.

4003.11 Emergency power. Gas detection systems and any mechanical exhaust system designed to maintain flammable vapor concentration below the lower explosive limit shall be provided with an emergency power system in accordance with the Building or as approved by a registered design professional.

4003.11

4003.12 Spill control. Drainage or containment systems to restrict and control spills, including noncombustible and liquid-tight floors, shall be provided in distilled spirits processing areas and alcohol storage areas in accordance with FC5004.2. A hose suitable for a classified environment connected to a water supply shall be provided to facilitate dilution of any spills.

4003.13 Storage areas. Storage areas shall be designed and installed in accordance with FC4005.

4003.14 Impact protection. Distillery equipment used to manufacture, store, handle or use beverage alcohol, including storage tanks, shall be protected from accidental impact from powered industrial trucks and other mechanical handling equipment in accordance with NFPA 505 and distilled spirits industry standards.

4003.15 Lightning protection. Medium and large distilleries that occupy a separate building shall be provided with lightning protection in accordance with the Electrical Code and NFPA 780.

SECTION FC 4004 DESIGN AND INSTALLATION REQUIREMENTS FOR DISTILLERY EQUIPMENT

4004.1 General. Distillery equipment shall be designed and installed in accordance with this section and distilled spirits industry standards.

4004.2 Listed and labeled. Distillery equipment used to manufacture, store, handle or use beverage alcohol shall be listed and labeled for the intended use, if listing and labeling exists for such equipment. The department may accept international or other approved certifications for components which are not listed and labeled by a nationally recognized testing laboratory.

4004.3 Electrical wiring and equipment. Distillery equipment used to manufacture, store, handle or use beverage alcohol shall be bonded and grounded to protect against electrical discharge in accordance with the Electrical Code.

4004.4 Piping systems. Piping systems for conveying Class I liquids, including piping, tubing, valves, pumps, and fittings shall be designed, installed and maintained in accordance with FC5703.6 and ASME B31.3, except that acceptance testing shall be conducted in accordance with FC4001.4.

4004.5 Stills. Stills shall be designed and installed in accordance with FC 4004.5.1 through 4004.5.4.

4004.5.1 Design of the still should be in accordance with industry standards and be approved by a certificate of fitness holder referenced in 4001.6.4.

4004.5.2 Installation. Stills shall be stationary, by securing them in an approved manner.

4004.5.3 Heat source. Heating shall be by indirect means, using steam, hot water or other approved method. Mechanical equipment with burners, or using other flames or exposed electrical elements, shall not be installed. An emergency shutoff switch for the heat source shall be provided at the entrance to the processing area.

4004.5.4 Ingredients. All liquid and solid ingredients shall be suitable for use in the still for which a certificate of approval is sought.

4004.6 Tanks and containers. Alcohol handled and used during distilling and alcohol processing shall be stored in alcohol process tanks in accordance with FC4005.

4004.7 Barrels. Barrels and barrel storage shall be designed in accordance with FC4005.3 and distilled spirits industry standards.

4004.8 Powered industrial trucks and other mechanical handling equipment. Powered industrial trucks shall be stored and used in accordance NFPA 505 and distilled spirits industry standards. Other mechanical handling equipment shall be stored and used in accordance with distilled spirits industry standards.

SECTION FC 4005 STORAGE OF ALCOHOL IN DISTILLERIES

4005.1 Alcohol storage tanks and containers. In a distillery, raw alcohol, distilled spirits and other alcohol that is a Class II or Class III liquid, shall be stored in tanks and containers designed and installed in accordance with FC Chapter 32 and NFPA 30, as applicable, except as otherwise provided in Sections 4005.1.1 through 4005.1.5.

4005.1.1 Aboveground storage. Notwithstanding the provisions of FC 5701.7(3) and 5704.1.1, in a distillery raw alcohol, distilled spirits and other alcohol that is a Class II or III liquid, shall be stored in an aboveground storage tank or aboveground intermediate bulk container.

4005.1.2 Tank and container construction. All tanks and containers in which alcohol is stored and handled, except barrel storage, shall be constructed of stainless steel and designed in accordance with FC 5704, 5705.2 and 5705.3. Raw alcohol delivered to a distillery in a plastic intermediate bulk container shall be immediately transferred into a stainless steel storage tank or stainless steel intermediate bulk container in accordance with FC4005.

4005.1.3 Tank and container installation. All tanks and containers in the distilled spirits processing area and all tanks and containers which transfer their contents by piping or which are otherwise part of a stationary installation, shall be securely affixed to the floor, to prevent movement.

4005.1.4 Portable tanks and containers. Portable tanks and containers not required to be affixed to the ground shall be placed in a location and manner in which they will remain stable. Portable tanks and portable containers shall not be stacked unless such tanks and containers are designed and listed for that purpose, and, if so, shall not be stacked more than two tiers or 12 feet (3658 mm) above the floor. Powered industrial trucks or other suitable devices, equipment or systems shall be used to lift and lower the portable tanks and portable containers.

4005.1.5 Open tanks and containers. Any open alcohol process tank or alcohol storage equipment shall have a vapor-tight lid or other similar form of closure. Such lid or closure shall be kept closed at all times when the tank or container contains alcohol or alcohol residues, except as necessary during handling and processing operations.

4005.1.6 Separation and aisles. Separation and aisles between storage tanks and containers shall be in accordance with FC5704.3.7.2.2.

4005.2 Distillery storage locations. In a distillery, raw alcohol, distilled spirits and other alcohol that is a Class II or Class III liquid shall be stored in the locations specified in Sections 4005.2.1 through 4005.2.6, except as otherwise provided in FC4003.4.2.

4005.2.1 Storage of raw alcohol. Raw alcohol shall be stored in an alcohol storage area. Raw alcohol shall not be stored in distilled spirits processing areas, but shall be transferred from the alcohol storage area to the still.

4005.2.2 Storage of process alcohol. Process alcohol shall be stored in the distilled spirits processing area in alcohol process tanks, except for alcohol temporarily stored in portable containers during processing, and barrel storage. Process alcohol undergoing aging in barrels shall be stored in a separate fire area as set forth in FC4003.4.

4005.2.3 Storage of distilled spirits ready for bottling. Distilled spirits ready for bottling or other packaging as finished goods shall be stored in distilled spirits process area in alcohol process tanks or alcohol storage area.

4005.2.4 Distillery waste products. Any methanol, stillage or other residue that is susceptible to spontaneous ignition or otherwise presents an imminent hazard shall be stored in an alcohol

storage area or other approved location. Any other distillery waste product, such as materials contaminated with alcohol, shall be stored in a noncombustible container in the business operations area and disposed of in accordance with FC304.

4005.2.5 Finished goods. Finished goods may be stored in the general business operations area, distillery serving area, alcohol storage room and barrel storage room.

4005.2.6 Other alcohol. Other alcohol that is a Class II or Class III liquid shall be stored in an alcohol storage area.

4005.3 Barrel storage. Alcohol shall be stored in barrels in accordance with FC 4005.3.1 through 4005.3.2.

4005.3.1 Barrel storage systems. Barrel storage shall be on the floor or in a secure rack of substantial construction in accordance with distilled spirits industry standards. Barrels stored above floor level shall be on noncombustible or other approved shelves, pallets or racks designed and/or listed for such purpose. Barrel storage more than 6 feet (1829 mm) above the floor shall be in compliance with Building Code requirements, the high-piled combustible storage requirements of FC Chapter 32, and distilled spirits industry standards.

4005.3.2 Used barrels. Barrels previously filled with distilled spirits shall be handled and stored as if full unless cleaned and purged of vapors in accordance with distilled spirits industry standards.

SECTION FC 4006 OPERATIONAL AND MAINTENANCE REQUIREMENTS FOR DISTILLERIES

4006.1 General. Distilleries shall be operated and maintained in accordance with this section and distilled spirits industry standards.

4006.2 Operation of distillery serving area in distilleries. Tasting rooms or other distillery serving areas may be housed or operated in a distillery provided that such tasting rooms and distillery serving areas are protected by a fire separation in accordance with FC4003.4. Any commercial kitchen shall be operated in a fire area separated from distilled spirits processing areas and alcohol storage areas in accordance with the Building Code.

4006.3 Business operations area. To the maximum extent practicable, the distilled spirits processing areas and alcohol processing areas in a distillery shall be used solely for distilling and alcohol processing. All other business operations, storage of other business equipment, deliveries (including deliveries of raw alcohol and other raw materials) and shipments (including shipment of finished goods), shall be conducted in a separate business operations area. Whenever practicable, deliveries of raw alcohol and other raw materials shall not be made through the distillery serving area or other area accessible to the public, or shall be made when those areas are closed to the public.

4006.4 Alcohol handling. All transfers of alcohol into and between distillery equipment shall be in accordance with FC5705.2.4, or other approved means.

4006.5 Barrel filling and emptying. Barrel filling and emptying, including the blending of distilled spirits from barrel storage, shall be conducted in the alcohol processing area or bottling area, except as otherwise provided in FC4003.4.2.

4006.6 Staffing of facility. A certificate of fitness holder shall be present on the premises at all times when distilling and alcohol processing is being conducted, shall personally conduct any distilling, and shall tend to the still at all times when in operation in accordance with distilled spirits industry standards. The certificate of fitness holder shall also be present on the premises during the transfer of raw alcohol from a shipping container into distillery equipment. At least one other trained and knowledgeable person shall be present on the premises when the quantity of alcohol undergoing distillation or alcohol processing exceeds 5 gallons (19 L).

4006.7 Spill mitigation and reporting. Leaks, spills or other uncontrolled discharges of raw alcohol or distilled spirits shall be mitigated and reported in accordance with FC 4006.7.1, 4006.7.2, and 5003.3.

4006.7.1 Spill mitigation. Spills of raw alcohol or distilled spirits shall be contained and, if practicable, promptly diluted by water. Spills shall be mitigated using a spill kit suitable for flammable alcohol and the flammable or combustible waste disposed of in accordance with applicable laws, rules and regulations. Floor drains shall only be used for collection and/or disposal of spills when approved b he de a me . The di ille ill mi iga i a d e i g ced e hall be e f h i he di ille eme ge c e e la .

4006.7.2 Cessation of distillery operations. In the event of a leak, spill or uncontrolled discharge, distillery operations unrelated to the mitigation of the release shall immediately cease. Distillery operations shall resume only when the hazard has been mitigated and the spilled material has been removed.

4006.8 Combustible materials. Packaging materials and other combustible materials shall not be stored in the distilled spirits processing area or barrel storage areas except as needed for immediate use. Additional (bulk) storage of such materials shall be located in the business operations or bottling areas of the distillery. Idle pallets of wood and other combustible materials shall be stored in the business operations area of the distillery in accordance with FC Chapter 32.

4006.9 Distillery waste products. Any methanol, stillage or other distillery waste product shall be collected and disposed of in accordance with FC304. Such waste shall be removed from the distilled spirits processing areas and alcohol processing areas immediately upon completion of the distilling or alcohol processing operation from which it was generated, and stored in accordance with FC4005.2.4.

4006.10 Public access and tours. Persons not conducting necessary distillery operations shall not be allowed in the distilled spirits processing areas and alcohol storage areas during distilling or alcohol processing operations, except distillery tours may be conducted in designated locations within such areas, as authorized by the department, and supervised by a certificate of fitness holder.

Non-distillery staff shall be restricted to the distillery serving area and general business operations area.

4006.11 Maintenance of equipment.
All distillery equipment shall be periodically inspected, tested and otherwise maintained in accordance with the original equipment manufacturer's instructions, distilled spirits industry standards, and all applicable laws, rules and regulations. The original equipment manufacturer's manuals for the installation, operation and maintenance of all distillery equipment shall be maintained on the premises and made available for inspection by any representative of the department.

4006.12 Sources of ignition. Safety precautions shall be taken to prevent ignition of flammable liquids or vapors from any potential ignition source, including any heat, friction or electrical current generated in connection with cleaning, maintenance and repair work.

4006.12.1 Smoking. It shall be unlawful to smoke in a distillery. "No Smoking" signs shall be posted in accordance with FC310.

4006.12.2 Open flames. Open flames, including barrel charring operations, are prohibited in the distilled spirits processing area and other alcohol production areas, except as authorized by the department.

4006.13 Signage and markings. NFPA 704 signage shall be posted at the entrance to the distilled spirits processing areas, and storage and barrel storage areas, in accordance with FC5003.5. The piping shall be marked in accordance with FC5703.5.

4006.14 Portable fire extinguishers. Portable fire extinguishers shall be provided in accordance with FC906.

4006.15 Safety data sheets. Safety data sheets shall be maintained on the premises in accordance with FC5003.4.

SECTION FC 4007 OTHER ALCOHOL PRODUCTION

4007.1 Scope. This section governs the materials and processes used to produce alcohol for distilling, including grain storage, handling and milling, mashing and fermenting, and any byproducts generated from those processes.

4007.2 General. All materials and processes governed by this section shall be designed, installed, operated and maintained in accordance with this section and distilled spirits industry standards.

4007.3 Grain storage, handling and milling. Distilleries shall be designed, installed operated and maintained to safely store, handle and use any grain or other raw material used in milling, mashing and fermenting operations that generates combustible dust, as defined in FC2202.1. A hazard analysis shall be conducted based on the quantity and processing of the grain or other combustible dust-producing raw material in accordance with NFPA 652. The distillery shall be designed and/or

equipped as required by NFPA 652 based on the type and amount of combustible dust that could be generated, including the following safety measures, as applicable:

1. Except as otherwise provided in FC4003.2(1), , handling and milling of grain or other combustible dust-producing raw material shall be conducted in a space that is constructed as a high hazard occupancy in accordance with the Building Code; and/or

2. Except as otherwise provided in FC4003.4.2, , handling and milling of grain or other combustible dust-producing raw material shall be conducted in a space separated by fire separations from the distilled spirits processing areas and alcohol processing areas and alcohol storage areas; and/or

3. A mechanical ventilation system shall be provided to prevent the concentration of combustible dust from reaching explosive levels in accordance with FC Table 2204.1; and/or

4. Specialized dust collection systems and devices shall be provided to reduce the amount of atmospheric combustible dust; and/or

5. Grain or other combustible dust-producing raw material shall be stored in suitable containers; and/or

6. Limitations shall be established on the quantity of grain or other combustible-dust producing raw material that can be stored, handled and milled at the distillery at one time.

4007.4 Design of facility. The space used for grain storage, handling and milling, mashing and fermenting, and/or related operations shall meet the requirements of FC 4007.4.1 through 4007.4.3.

4007.4.1 Separation from distilled spirits and alcohol processing areas. Such space shall be separated by fire separations from the distilled spirits processing areas and alcohol processing areas and alcohol storage areas, or shall meet the requirements for such areas as set forth in FC4003.

4007.4.2 Fire protection systems. Such space shall be equipped with fire protection systems in accordance with FC4003.5, notwithstanding the provision of fire separation pursuant to FC4007.4.1.

4007.4.3 Mechanical equipment. No mechanical equipment with burners or using other flames or exposed electrical elements, may be installed or used, notwithstanding the provision of fire separation pursuant to FC4007.4.1.

4007.5 Other alcohol production waste. Any byproduct or residue generated by grain storage, handling and milling, mashing and fermenting and/or related operations, including combustible liquids, combustible waste and carbon dioxide, shall be handled or mitigated in a manner appropriate for the level of hazard that it presents. Where the carbon dioxide generated by other alcohol production may exceed United States Occupational Safety and Health Administration safety limits, an oxygen sensor or other approved or listed device shall be installed.

CHAPTERS 41 THROUGH 49 RESERVED

CHAPTER 50
HAZARDOUS MATERIALS—GENERAL PROVISIONS

SECTION FC [2701] 5001
GENERAL

[2701.1] 5001.1 Scope. This chapter shall govern the storage, handling, use and transportation of hazardous materials. Hazardous material storage, handling and use shall additionally comply with the requirements of the New York State Department of Environmental Conservation regulations, as set forth in 6 NYCRR Parts [595] 596 through [614] 613.

Exceptions:

1. The storage, handling and use in retail or wholesale [sales] mercantile occupancies of alcoholic beverages, medicines, foodstuffs, cosmetics, and consumer products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, when packaged in individual containers not exceeding 1.3 gallons (5 L) in volume.

2. Storage, handling and use of hazardous materials for agricultural purposes as a pesticide, fertilizer or similar application, when approved for such use by the regulatory agency having jurisdiction and when such storage, handling and use is in accordance with the ma fac e i c i .

3. Reserved.

4. Reserved.

5. Refrigerating systems when designed, installed, operated and maintained in accordance with the Mechanical Code and FC606.

6. Stationary energy storage [battery] systems when designed, installed, operated and maintained in accordance with FC608 and the rules.

7. The storage, handling and use, including storage for sale, of fireworks, in accordance with FC Chapter [33] 56.

8. The storage, handling and use of corrosives in Group M occupancies, including storage f ale, f e al a d h eh ld d c , he i he ma fac e igi al consumer packaging.

9. The storage of [distilled spirits and] wines in wooden barrels and casks.

10. The manufacturing, storage, handling and use of distilled spirits in distilleries in accordance with FC Chapter 40.

11. The use of [wall-mounted] dispensers containing alcohol-based hand rubs classified as Class I or Class II liquids, when stored, handled and used in accordance with [FC3405.5] FC5705.5.

[2701.1.1] 5001.1.1 Relationship with other chapters. This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements inconsistent with the provisions of this chapter are set forth elsewhere in this code, those specific requirements shall apply to the extent that they are inconsistent. Where a material is in multiple hazard categories, compliance with each hazard category shall be required. Where a material is both a physical hazard and a health hazard, compliance with the requirements for each hazard category shall be required.

[2701.2] 5001.2 Material classification. Hazardous materials shall be classified by physical hazard, health hazard and/or other hazards associated with the properties of the material, or if the hazardous material is a mixture, with the hazards associated with the mixture as a whole. The commissioner may determine the appropriate hazard classification of a hazardous material, or may accept the classification set forth in nationally recognized standards, [material] safety data sheets, or other approved standard or method.

[2701.2.1] 5001.2.1 Reserved.

[2701.2.2 Reserved.**] 5001.2.2 Hazard categories.** Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code.

[2701.2.2.1] 5001.2.2.1 Physical hazards. The material categories listed in this section are classified primarily as physical hazards.

1. Explosives and blasting agents.

2. Combustible liquids.

3. Flammable solids, liquid and gases.

4. Organic peroxide solids or liquids.

5. Oxidizing solids or liquids.

6. Oxidizing gases.

7. Pyrophoric solids or liquids.

8. Unstable (reactive) solids, liquids or gases.

9. Water-reactive solids and liquids.

10. Cryogenic fluids.

[2701.2.2.2] 5001.2.2.2 Health hazards. The material categories listed in this section are classified primarily as health hazards.

1. Highly toxic and toxic materials.

2. Corrosive materials.

[2701.3] 5001.3 Reserved.

[2701.4] 5001.4 Retail and wholesale storage and display. For retail and wholesale storage and display of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in Group M occupancies and storage in Group S occupancies, see [FC2703.11] FC5003.11.

[2701.5] 5001.5 Permits. Permits shall be required as set forth in FC105.6.

[2701.5.1] 5001.5.1 Hazardous Materials Management Plan. The commissioner may require an application for a permit to include a Hazardous Materials Management Plan (HMMP). Such plan shall be drawn approximately to scale. The HMMP shall contain the following:

1. Access to each area where hazardous materials are stored, handled or used.

2. Location of emergency equipment.

3. Location where liaison required by [FC2703.9.1.1] FC5003.9.1.1 will meet emergency responders.

4. Facility evacuation meeting point locations.

5. The predominant use and/or occupancy of areas within the building where hazardous materials are not stored or used.

6. Location of all aboveground and underground hazardous material storage tanks and their appurtenances including, but not limited to, sumps, vaults, below-grade treatment systems and piping.

7. The hazard classes of hazardous materials stored or used in each area.

8. Locations of all control areas and Group H occupancies.

9. Locations of exits.

10. Such other information and documentation as the commissioner may prescribe.