MEMORANDUM

TO: City of Portland Zoning Board of Appeals

FROM: Jen Thompson, Associate Corporation Counsel

DATE: June 15, 2018

RE: Interpretation Appeal 450 Commercial Street

INTRODUCTION

450 Commercial Street, the property that is the subject of this appeal, is known as Deake's Wharf. Deake's Wharf has four buildings located on the lot. The specific building at issue in this case is the large, blue building circled on the attached Google Earth image. ***See* Exhibit 1**

According to City files, that building was originally constructed in or around the 1940s. As part of its initial approval and under the building permit that was issued in 1940, although the proposed building was larger than was typically permitted, the building was approved on the condition and with the assurance of the owner that sprinklers would be installed and maintained throughout. ***See* Exhibit 2.** This was in recognition of the fire safety concerns associated with a large, timber frame structure located on the City's waterfront. Further, a 1948 addition to the building was permitted to be built without the 2 hour fire barrier separation that would normally have been required at that time because the applicant agreed to extend the fire sprinkler system throughout the addition. ***See* Exhibit 3.**

In the spring of 2018, the City became aware of the fact that the sprinkler system was disabled. According to a sign on the property, the sprinkler was disabled as of 1996. ***See* Exhibit 4.** On April 25, 2018 the City's Permitting and Inspections Department issued a Notice of Violation on the basis that the building is required to be sprinkled. The owner of the property, General Marine Construction, has appealed. For the reasons outlined below, the City's determination should be upheld.

ARGUMENT

First and foremost, (and putting aside for the moment the NFPA), because the building at issue here was originally approved on the condition that it be equipped with a functioning sprinkler system and because there has been no amendment or waiver of that requirement by the City, there is simply no basis in law or in fact for Marine Construction's suggestion that that requirement somehow no longer applies.

A functioning sprinkler system was required in 1940 when the building was approved for construction. The sprinkler requirement was reiterated when the 1948 addition was approved and that requirement has at no time been changed. There is also nothing in the City's file to support Marine Construction's contention that, over time, the use of the building has been changed in a manner that would somehow alter Marine Construction's fire safety obligations or the hazards presented by the

building. Significantly, it should be noted that if there has been a change of use on the property, there is no record of any approval of that change by the City - which is required under the Code.

There is also nothing in the file to support the suggestion that the fire safety concerns that existed in 1940 with respect to a large, timber frame building constructed at the end of a wharf have somehow changed "due to the passage of time." Marine Construction has not suggested that it has updated the building in any way since its original construction to mitigate fire safety risks. Therefore, the building is plainly out of compliance with its original approval and the City's Notice of Violation should be upheld on that basis alone.

Additionally, under the City's current Fire and Life safety codes, a functioning sprinkler system is required. Relevant code sections and application of those sections is as follows:

Under Section 4.5.8 of 2009 edition of NFPA 101 Life Safety Code:

> "Whenever or wherever any device, equipment, system, condition, arrangement, level of protection or any other feature is required for compliance with the provisions of this code, such device, equipment, system, condition, arrangement, level of protection or any other feature shall thereafter be maintained unless the code exempts such maintenance".

Included in the provisions with which a system must comply are the provisions of the NFPA 1 Fire Code. That Code contains the the following provisions (See attached):

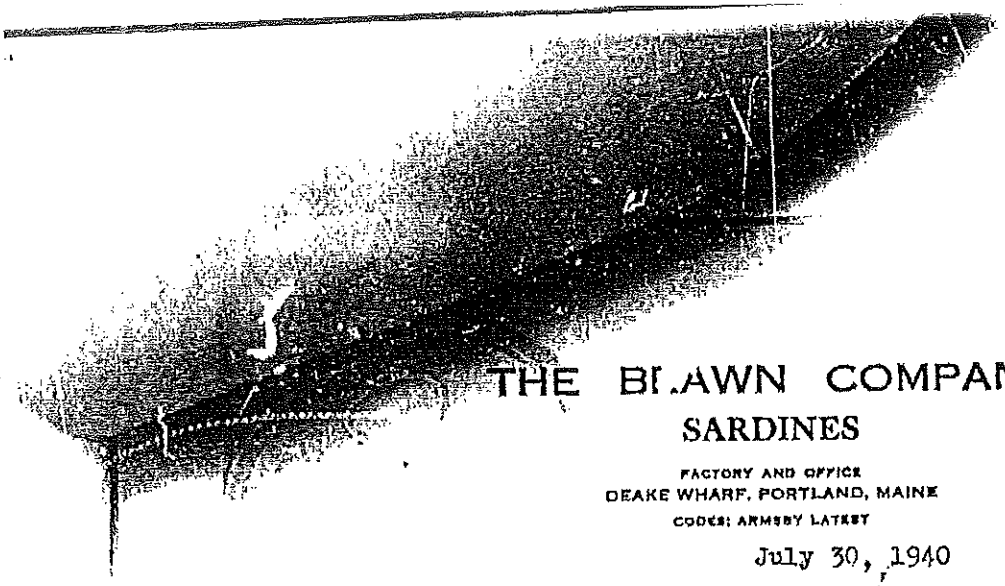
- Section 4.5.8.2 "No existing life safety feature shall be removed or deduced where such feature is a requirement for new construction".
- Section 28.1.6.2.1.1 then outlines what is required of new construction: "Buildings in excess of 500 sq. ft. that are constructed on piers shall be protected by an approved automatic fire extinguishing system unless otherwise permitted by 28.1.6.2.1.2 or 28.1.6.2.1.3" (emphasis added).
    - 28.1.6.2.1.2 outlines an exception that does not apply here. That section provides: "Buildings of Type *I* or *II* construction shall not be required to be protected." This building appears to be a Type *V* construction so, again, this exception does not apply.

    - 28.1.6.2.1.3 outlines another exception that also does not apply: "Existing facilities shall not be required to be protected by an automatic fire extinguishing system where acceptable to the Authority Having Jurisdiction (AHJ)." This exception does not apply in this case because per 4.5.8.2 if it is a requirement of new construction the life safety feature cannot be removed or reduced. Additionally, in this case, the AHJ (Portland Fire Department Chief) concluded that waiver of the automatic fire safety requirement is not appropriate given the evidence from the 1940 approval that the building was originally constructed with a sprinkler system and after an express finding that such a system was necessary due to the size and character of the building. According to the AHJ, it would not be acceptable for the sprinkler system to be removed from the building.

Although the City can appreciate that there may be substantial cost to Marine Construction to repair the sprinkler system that should not bear on the legitimacy of the City's notice of violation. The sprinkler system has been a requirement since the building was built, there has never been any approval from the City to disable the sprinkler system nor has there been any agreement by the City to waive the fire safety requirement that the building be sprinkled. The City of Portland is accutely attuned to the risk of fire damage, particularly in the downtown and along the waterfront. The building at issue here has been required to have a sprinkler system since 1940. Marine Construction has failed to comply with that requirement and should be obligated to correct the violation.

To the extent the 2 month deadline included in the City's NOV is not feasible, the City is certainly open to negotiating a more achievable timeline - but a sprinkler system is required in the interests of public safety and compliance should be achieved with some urgency.


450 Commercial St
© 2018 Google
207 ft
Google Earth
43°39'01.77" N 70°15'35.75" W elev 76 ft eye alt 911 ft



TELETYPE 292

THE BRAWN COMPANY

SARDINES

FACTORY AND OFFICE
DEAKE WHARF, PORTLAND, MAINE
CODES: ARMSBY LATEST

July 30, 1940

Mr. Warren McDonald

Inspector of Building
Portland, Maine

Dear Sir:

THE PROPOSITION IS SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF THIS SHEET

We are advised by J. B. Brown Construction Co. that our permit is being held up due to their being too much floor area.

It is our intention to have the entire building equipted with a Sprinkler System as soon as possible.

Yours very truly,

THE BRAWN COMPANY
L. W. Bastow
L. W. Bastow

RECEIVED
JUL 30 1940
DEPT. OF BLD'G. INSP.
CITY OF PORTLAND

EXHIBIT
2

F. No. 40/1064-I

none

August 3, 1940

Brown Construction Co.,
362 Congress St.,
Portland, Maine

Gentlemen:

Enclosed is the building permit covering construction of a two-story addition for The Brown Co. on Deake Wharf, issued subject to the following:

Mr. Barstow assures me that the entire building will be equipped with a standard automatic sprinkler system as soon as work on the addition is far enough along to permit the system to be installed. Thus the excessive area will be taken care of.

An additional stairway has been shown on the harbor end of the building from second to first floor, thus meeting the criticism of the Fire Chief, who has now approved the permit.

It is understood that all woodwork otherwise exposed on the exterior is to be covered with metal, except sash and doors not larger than 21 square feet in area.

Neither the 2x8 roof joists nor the 4x8 beams under the monitor seem to work out strong enough if dressed hemlock is to be used. Please advise what you will do in these instances.

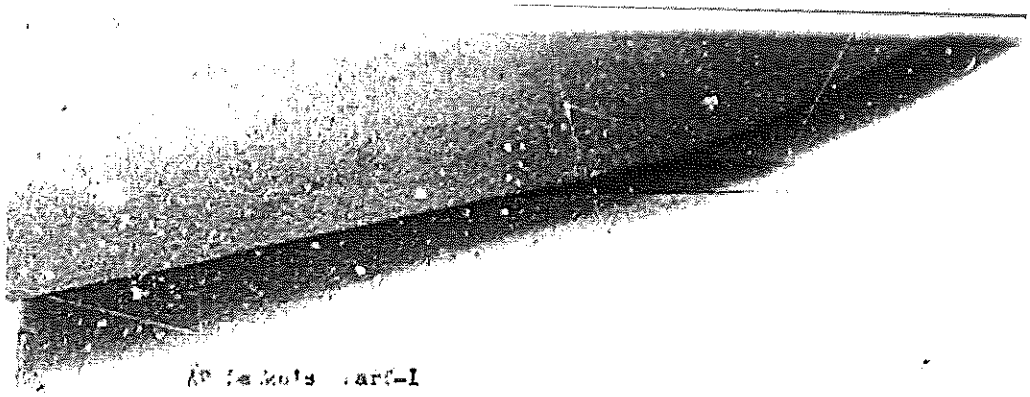
The 8x10 's in the roof and the 3x8's in second floor which you propose to be dressed hemlock, seem to work out all right. We are not sure just what type the loads there will be, but have assumed 100 pounds per square foot live load on both floors. If any part of either first or second floor of addition is to be used for storage, permanent signs showing the allowable load per squarefoot will be required.

We have not enough information about spacing and true location of piles to check the safety of the 10x10 hard pine caps in the new wharf structure. Quite a large load will come down the interior columns, and if columns should land between the third points of the 10x10, a substantial overload will likely ensue. This matter should be looked into before proceeding, so as not to hamper reinforcement if found necessary. It is not clear how center I-beams are to get their bearings. Presumably the posts are to be continuous, the interior ones resting on top of one another, the exterior ones and the studs bearing upon sills, girts or girders as the case may be.

CC The Brown Co., Deake Wharf.
H. W. Rhodes, 51½ Exchange St.

Very truly yours,

Inspector of Buildings.



Re Deake's Wharf-1

October 8, 1948

Brown Packing Company
Deake's Wharf
Mr. J. L. Arsitage
23 Mitchell Road
South Portland, Maine

Subject: Application for permit for construction of two story addition 12' x 48' to factory on Deake's Wharf

Gentlemen:

A check of the plan filed with application discloses the following questions as to compliance with Building Code requirements:

1. The automatic sprinkler system is to be extended to the addition. - OK

2. Since this building is located within Fire District /2, Section 405-a-3 of the Building Code now provides that no part of the exterior wall of the addition may be located closer than 20' to any part of the existing wood frame pump house unless the wall of the addition wherever closer than that distance to the pump house is constructed as for a two hour fire separation with all openings consistent protected. Such a wall would have to be a masonry wall and since the addition is to be built on a pile wharf, a masonry wall could be built only at great expense for a foundation.

While an opportunity for an exception by the Municipal Officers applies in this case, if the addition can be joined to the pump house and the sprinkler system extended to cover the small building we can accept such an arrangement in lieu of the two hour wall. However, if this scheme is not practicable, we can also accept an arrangement - OK whereby the sprinkler system will be extended to the small building and a manually operated fire curtain installed in accordance with the standards of the National Board of Fire Underwriters will be provided along the entire side of the addition. - O.K

3. The 2x8 floor timbers on spans of about 12' indicated for the second floor of the addition, if of dressed spruce or hemlock, will not figure out to provide the required live load capacity of seventy-five pounds per square foot specified by the Building Code. However, if they are to be of dressed Douglas Fir or Long Leaf Yellow Pine, they will work out all right. Likewise the 2x6 rafters on a span of 12' will not work out unless of Douglas Fir or Long Leaf Yellow Pine. - OK.

4. What is addition to be used for? Is it to be merely an extension of the factory space or is it to house some new process for handling by-products? - OK.

5. Floor load signs indicating the safe live load for which the second floor framing is designed are required to be posted in the second story of the addition. To be provided.

6. All exterior woodwork of addition is required to be metal covered. This includes corner boards, window casings, overhang of eaves, etc. - O.K.

Decision should be made as to method to be adopted to meet Building Code requirements, then plan should be revised accordingly together with answers to the above questions and submitted for checking and approval in order that we may be able to issue the permit for the work.

O.K.

Very truly yours,

AJB/C
CC: Mr. Joseph W. Bucklin
Deake's Wharf

Inspector of Buildings

12/17 12/17

EXHIBIT 3


SPRINKLER
Out Of
Service
January 1996

NFPA *101*®

Life Safety Code®

2009 Edition

NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471
An International Codes and Standards Organization

EXHIBIT
5

4.4 Life Safety Compliance Options.

4.4.1 Options. Life safety meeting the goals and objectives of Sections 4.1 and 4.2 shall be provided in accordance with either of the following:

(1) Prescriptive-based provisions per 4.4.2
(2) Performance-based provisions per 4.4.3

4.4.2 Prescriptive-Based Option.

4.4.2.1 A prescriptive-based life safety design shall be in accordance with Chapters 1 through 4, Chapters 6 through 11, Chapter 43, and the applicable occupancy chapter, Chapters 12 through 42.

4.4.2.2 Prescriptive-based designs meeting the requirements of Chapters 1 through 3, Sections 4.5 through 4.8, and Chapters 6 through 43 of this *Code* shall be deemed to satisfy the provisions of Sections 4.1 and 4.2.

4.4.2.3 Where specific requirements contained in Chapters 11 through 43 differ from general requirements contained in Chapters 1 through 4, and Chapters 6 through 10, the requirements of Chapters 11 through 43 shall govern.

4.4.3 Performance-Based Option. A performance-based life safety design shall be in accordance with Chapters 1 through 5.

4.5 Fundamental Requirements.

4.5.1 Multiple Safeguards. The design of every building or structure intended for human occupancy shall be such that reliance for safety to life does not depend solely on any single safeguard. An additional safeguard(s) shall be provided for life safety in case any single safeguard is ineffective due to inappropriate human actions or system failure.

4.5.2 Appropriateness of Safeguards. Every building or structure shall be provided with means of egress and other fire and life safety safeguards of the kinds, numbers, locations, and capacities appropriate to the individual building or structure, with due regard to the following:

(1) Character of the occupancy, including fire load
(2) Capabilities of the occupants
(3) Number of persons exposed
(4) Fire protection available
(5) Capabilities of response personnel
(6) Height and construction type of the building or structure
(7) Other factors necessary to provide occupants with a reasonable degree of safety

4.5.3 Means of Egress.

4.5.3.1 Number of Means of Egress. Two means of egress, as a minimum, shall be provided in every building or structure, section, and area where size, occupancy, and arrangement endanger occupants attempting to use a single means of egress that is blocked by fire or smoke. The two means of egress shall be arranged to minimize the possibility that both might be rendered impassable by the same emergency condition.

4.5.3.2 Unobstructed Egress. In every occupied building or structure, means of egress from all parts of the building shall be maintained free and unobstructed. Means of egress shall be accessible to the extent necessary to ensure reasonable safety for occupants having impaired mobility.

4.5.3.3 Awareness of Egress System. Every exit shall be clearly visible, or the route to reach every exit shall be conspicuously indicated. Each means of egress, in its entirety, shall be arranged or marked so that the way to a place of safety is indicated in a clear manner.

4.5.3.4 Lighting. Where artificial illumination is needed in a building or structure, egress facilities shall be included in the lighting design.

4.5.4* Occupant Notification. In every building or structure of such size, arrangement, or occupancy that a fire itself might not provide adequate occupant warning, fire alarm systems shall be provided where necessary to warn occupants of the existence of fire.

4.5.5* Situation Awareness. Systems used to achieve the goals of Section 4.1 shall be effective in facilitating and enhancing situation awareness, as appropriate, by building management, other occupants and emergency responders of the functionality or state of critical building systems, the conditions that might warrant emergency response, and the appropriate nature and timing of such responses.

4.5.6 Vertical Openings. Every vertical opening between the floors of a building shall be suitably enclosed or protected, as necessary, to afford reasonable safety to occupants while using the means of egress and to prevent the spread of fire, smoke, or fumes through vertical openings from floor to floor before occupants have entered exits.

4.5.7 System Design/Installation. Any fire protection system, building service equipment, feature of protection, or safeguard provided to achieve the goals of this *Code* shall be designed, installed, and approved in accordance with applicable NFPA standards.

4.5.8 Maintenance. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be maintained, unless the *Code* exempts such maintenance.

4.6 General Requirements.

4.6.1 Authority Having Jurisdiction.

4.6.1.1 The authority having jurisdiction shall determine whether the provisions of this *Code* are met.

4.6.1.2 Any requirements that are essential for the safety of building occupants and that are not specifically provided for by this *Code* shall be determined by the authority having jurisdiction.

4.6.1.3 Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if, in the judgment of the authority having jurisdiction, its application would be hazardous under normal occupancy conditions.

4.6.2 Previously Approved Features. Where another provision of this *Code* exempts a previously approved feature from a requirement, the exemption shall be permitted, even where the following conditions exist:

(1) The area is being modernized, renovated, or otherwise altered.
(2) A change of occupancy has occurred, provided that the feature's continued use is approved by the authority having jurisdiction.

4.6.3 Stories in Height. Unless otherwise specified in another provision of this *Code*, the stories in height of a building for locating an occupancy shall be determined as follows:

(1) The stories in height shall be counted starting with the level of exit discharge and ending with the highest occupiable story containing the occupancy considered.
(2) Stories below the level of exit discharge shall not be counted as stories.
(3) Interstitial spaces used solely for building or process systems directly related to the level above or below shall not be considered a separate story.
(4) A mezzanine shall not be counted as a story for the purpose of determining the allowable stories in height.
(5) Where a maximum one-story abovegrade parking structure, enclosed, open, or a combination thereof, of Type I or Type II (222) construction or open Type IV construction, with grade entrance, is provided under a building of occupancies other than assembly, health care, detention and correctional, and ambulatory health care occupancies, the number of stories shall be permitted to be measured from the floor above such a parking area.

4.6.4 Historic Buildings.

4.6.4.1 Rehabilitation projects in historic buildings shall comply with Chapter 43.

4.6.4.2* The provisions of this *Code* shall be permitted to be modified by the authority having jurisdiction for buildings or structures identified and classified as historic buildings or structures where it is evident that a reasonable degree of safety is provided.

4.6.5* Modification of Requirements for Existing Buildings. Where it is evident that a reasonable degree of safety is provided, the requirements for existing buildings shall be permitted to be modified if their application would be impractical in the judgment of the authority having jurisdiction.

4.6.6 Time Allowed for Compliance. A limited but reasonable time, commensurate with the magnitude of expenditure, disruption of services, and degree of hazard, shall be allowed for compliance with any part of this *Code* for existing buildings.

4.6.7* Referenced Publications. Existing buildings or installations that do not comply with the provisions of the standards referenced in this document *(see Chapter 2)* shall be permitted to be continued in service, provided that the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

4.6.8 Building Rehabilitation.

4.6.8.1 Rehabilitation work on existing buildings shall be classified as one of the following work categories in accordance with 43.2.2.1:

(1) Repair
(2) Renovation
(3) Modification
(4) Reconstruction
(5) Change of use or occupancy classification
(6) Addition

4.6.8.2 Rehabilitation work on existing buildings shall comply with Chapter 43.

4.6.8.3 Except where another provision of this *Code* exempts a previously approved feature from a requirement, the resulting feature shall be not less than that required for existing buildings.

4.6.8.4* Existing life safety features that exceed the requirements for new buildings shall be permitted to be decreased to those required for new buildings.

4.6.8.5* Existing life safety features that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished.

4.6.9 Provisions in Excess of *Code* Requirements. Nothing in this *Code* shall be construed to prohibit a better building construction type, an additional means of egress, or an otherwise safer condition than that specified by the minimum requirements of this *Code*.

4.6.10 Conditions for Occupancy.

4.6.10.1 No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this *Code*, unless the following conditions exist:

(1) A plan of correction has been approved.
(2) The occupancy classification remains the same.
(3) No serious life safety hazard exists as judged by the authority having jurisdiction.

4.6.10.2 Where compliance with this *Code* is effected by means of a performance-based design, the owner shall annually certify compliance with the conditions and limitations of the design by submitting a warrant of fitness acceptable to the authority having jurisdiction. The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by Section 5.8 and that such features, systems, and use continue to satisfy the goals and objectives specified in Sections 4.1 and 4.2. *(See Chapter 5.)*

4.6.11 Construction, Repair, and Improvement Operations.

4.6.11.1* Buildings, or portions of buildings, shall be permitted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures acceptable to the authority having jurisdiction are in place.

4.6.11.2* In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction.

4.6.11.3 Flammable or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building.

4.6.12 Change of Use or Occupancy Classification. In any building or structure, whether or not a physical alteration is needed, a change from one use or occupancy classification to another shall comply with 4.6.8.

4.6.13 Maintenance, Inspection, and Testing.

4.6.13.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive

construction, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the authority having jurisdiction.

4.6.13.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction.

4.6.13.3* Existing life safety features obvious to the public, if not required by the *Code*, shall be either maintained or removed.

4.6.13.4 Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this *Code* or as directed by the authority having jurisdiction.

4.6.13.5 Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the authority having jurisdiction.

4.7* Fire Drills.

4.7.1 Where Required. Emergency egress and relocation drills conforming to the provisions of this *Code* shall be conducted as specified by the provisions of Chapters 11 through 43, or by appropriate action of the authority having jurisdiction. Drills shall be designed in cooperation with the local authorities.

4.7.2* Drill Frequency. Emergency egress and relocation drills, where required by Chapters 11 through 43 or the authority having jurisdiction, shall be held with sufficient frequency to familiarize occupants with the drill procedure and to establish conduct of the drill as a matter of routine. Drills shall include suitable procedures to ensure that all persons subject to the drill participate.

4.7.3 Orderly Evacuation. When conducting drills, emphasis shall be placed on orderly evacuation rather than on speed.

4.7.4* Simulated Conditions. Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.

4.7.5 Relocation Area. Drill participants shall relocate to a predetermined location and remain at such location until a recall or dismissal signal is given.

4.7.6* A written record of each drill shall be completed by the person responsible for conducting the drill and maintained in an approved manner.

4.8 Emergency Plan.

4.8.1 Where Required. Emergency plans shall be provided as follows:

(1) Where required by the provisions of Chapters 11 through 42
(2) Where required by action of the authority having jurisdiction

4.8.2 Plan Requirements.

4.8.2.1* Emergency plans shall include the following:

(1) Procedures for reporting of emergencies
(2) Occupant and staff response to emergencies
(3)*Evacuation procedures appropriate to the building, its occupancy, and emergencies *(see Section 4.3)*
(4) Appropriateness of the use of elevators
(5) Design and conduct of fire drills
(6) Type and coverage of building fire protection systems
(7) Other items required by the authority having jurisdiction

4.8.2.2 Required emergency plans shall be submitted to the authority having jurisdiction for review.

4.8.2.3 Emergency plans shall be reviewed and updated as required by the authority having jurisdiction.

Chapter 5 Performance-Based Option

5.1 General Requirements.

5.1.1* Application. The requirements of this chapter shall apply to life safety systems designed to the performance-based option permitted by 4.4.1 and 4.4.3.

5.1.2 Goals and Objectives. The performance-based design shall meet the goals and objectives of this *Code* in accordance with Sections 4.1 and 4.2.

5.1.3 Qualifications. The performance-based design shall be prepared by a registered design professional.

5.1.4* Independent Review. The authority having jurisdiction shall be permitted to require an approved, independent third party to review the proposed design and provide an evaluation of the design to the authority having jurisdiction.

5.1.5 Sources of Data. Data sources shall be identified and documented for each input data requirement that must be met using a source other than a design fire scenario, an assumption, or a building design specification. The degree of conservatism reflected in such data shall be specified, and a justification for the source shall be provided.

5.1.6* Final Determination. The authority having jurisdiction shall make the final determination as to whether the performance objectives have been met.

5.1.7* Maintenance of Design Features. The design features required for the building to continue to meet the performance goals and objectives of this *Code* shall be maintained for the life of the building. Such performance goals and objectives shall include complying with all documented assumptions and design specifications. Any variations shall require the approval of the authority having jurisdiction prior to the actual change. *(See also 4.6.10.2.)*

5.1.8 Special Definitions. A list of special terms used in this chapter follows:

(1) **Alternative Calculation Procedure.** See 3.3.13.
(2) **Data Conversion.** See 3.3.48.
(3) **Design Fire Scenario.** See 3.3.96.1.
(4) **Design Specification.** See 3.3.244.1.
(5) **Design Team.** See 3.3.53.
(6) **Exposure Fire.** See 3.3.80.
(7) **Fire Model.** See 3.3.92.
(8) **Fire Scenario.** See 3.3.96.
(9) **Fuel Load.** See 3.3.153.1.
(10) **Incapacitation.** See 3.3.137.
(11) **Input Data Specification.** See 3.3.244.2.
(12) **Occupant Characteristics.** See 3.3.179.

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4.5.5.2 The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by 5.1.8 and 5.7.3 and that they continue to satisfy the goals and objectives specified in Section 4.1. *(See 5.1.11.)*

4.5.6 Construction, Repair, and Improvement Operations.

4.5.6.1 Buildings or portions of buildings shall be permitted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures and building protection measures acceptable to the AHJ are in place.

4.5.6.2 Escape Facilities.

4.5.6.2.1 In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers.

4.5.6.2.2 Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction.

4.5.6.3 Flammable, hazardous, or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building and is such that materials are safeguarded when the building is unoccupied.

4.5.7* Changes of Occupancy.

4.5.7.1 In any building or structure, whether or not a physical alteration is needed, a change from one occupancy classification to another shall be permitted only where such a structure, building, or portion thereof conforms with the requirements of this *Code* that apply to new construction for the proposed new use, except as follows:

(1) Where, in the opinion of the AHJ, the proposed occupancy or change in use is not more hazardous than the existing use, based on life safety and fire risk, the AHJ shall be permitted to approve such change of occupancy provided compliance with the requirements of this *Code* for buildings of like occupancy or use are specifically incorporated to safeguard the life, health, and welfare of persons.
(2) Change of tenants or ownership shall not be construed to be a change of occupancy classification where the nature of use and assigned occupancy classification remain the same.

4.5.7.2 Where specifically permitted elsewhere in the *Code*, existing construction features shall be permitted to be continued in use in conversions.

4.5.8 Maintenance, Inspection, and Testing.

4.5.8.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the AHJ. [*101*:4.6.13.1]

4.5.8.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [*101*:4.6.13.2]

4.5.8.3* Existing life safety features obvious to the public, if not required by the *Code*, shall be either maintained or removed. [*101*:4.6.13.3]

4.5.8.4* Existing life safety features that exceed the requirements for new buildings shall be permitted to be decreased to those required for new buildings. [*101*:4.6.8.4]

4.5.8.5* Existing life safety features that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished. [*101*:4.6.8.5]

4.5.8.6 Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this *Code* or as directed by the AHJ. [*101*:4.6.13.4]

4.5.8.7 Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ. [*101*:4.6.13.5]

Chapter 5 Performance-Based Option

5.1* General.

5.1.1 Application. The requirements of this chapter shall apply to facilities designed to the performance-based option permitted by Section 4.3.

5.1.2 Goals and Objectives. The performance-based design shall meet the goals and objectives of this *Code* in accordance with Section 4.1 and Section 4.2.

5.1.3* Approved Qualifications. The performance-based design shall be prepared by a person with qualifications acceptable to the AHJ.

5.1.4* Plan Submittal Documentation. When a performance-based design is submitted to the AHJ for review and approval, the owner shall document, in an approved format, each performance objective and applicable scenario, including any calculation methods or models used in establishing the proposed design's fire and life safety performance.

5.1.5* Independent Review. The AHJ shall be permitted to require an approved, independent third party to review the proposed design and provide an evaluation of the design to the AHJ at the expense of the owner.

5.1.6 Sources of Data. Data sources shall be identified and documented for each input data requirement that is required to be met using a source other than a required design scenario, an assumption, or a facility design specification.

5.1.6.1 The degree of conservatism reflected in such data shall be specified, and a justification for the source shall be provided.

where laboratory-scale operations are conducted and shall not cover the following:

(1) The special fire protection required when handling explosive materials *(See NFPA 495.)*
(2) The special fire protection required when handling radioactive materials [45:1.1.3]

26.1.5 Plans and Procedures.

26.1.5.1* Fire prevention, maintenance, and emergency plans and procedures shall be established.

26.2* Laboratories in Health Care Occupancies. Any building, space, room, or group of rooms in a health care facility intended to serve activities involving procedures for investigation, diagnosis, or treatment in which flammable, combustible, or oxidizing materials are to be used shall comply with Section 26.1 of this *Code* and Chapter 11 of NFPA 99, *Standard for Health Care Facilities.*

26.3 Permits. Permits, where required, shall comply with Section 1.12.

Chapter 27 Manufactured Home and Recreational Vehicle Sites

27.1 General.

27.1.1 Manufactured home and recreational vehicle sites shall meet the requirements of this chapter.

27.1.2 This chapter shall not apply to recreational vehicles as defined in NFPA 1192, *Standard on Recreational Vehicles*, or to park trailers as defined in RVIA/ANSI A.119.5, *Standard for Park Trailers.*

27.1.3 This chapter shall not cover the design of recreational vehicles or other forms of camping units or the operational and maintenance practices of recreational vehicle parks and campgrounds.

27.2 Manufactured Home Sites. The fire safety requirements for the installation of manufactured homes and manufactured home sites, including accessory buildings, structures, and communities, shall comply with NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities.*

27.3 Recreational Vehicle Parks and Campgrounds. The construction of recreational vehicle parks and campgrounds that offer temporary living sites for use by recreational vehicles and camping units shall comply with NFPA 1194, *Standard for Recreational Vehicle Parks and Campgrounds.*

Chapter 28 Marinas, Boatyards, Marine Terminals, Piers, and Wharves

28.1 Marinas, Boatyards, and Other Recreational Marine Facilities.

28.1.1 The construction and operation of marinas, boatyards, yacht clubs, boat condominiums, docking facilities associated with residential condominiums, multiple-docking facilities at multiple-family residences, and all associated piers, docks, and floats shall comply with NFPA 303, *Fire Protection Standard for Marinas and Boatyards*, and Section 28.1.

28.1.2 Section 28.1 shall not apply to private, noncommercial docking facility constructed or occupied for the use of the owners or residents of an associated single-family dwelling.

28.1.3 Section 28.1 shall apply to support facilities and structures used for construction, repair, storage, hauling and launching, or fueling of vessels if fire on a pier would pose an immediate threat to these facilities, or if a fire at a referenced facility would pose an immediate threat to a docking facility. [303:1.1.1]

28.1.4 Section 28.1 applies to marinas and facilities servicing small recreational and commercial craft, yachts, and other craft of not more than 300 gross tons. [303:1.1.2]

28.1.5 No requirement in this chapter shall be construed as reducing applicable building, fire, and electrical codes. [303:1.1.4]

28.1.6 Fire Protection.

28.1.6.1 Portable Fire Extinguishers.

28.1.6.1.1 Placement.

28.1.6.1.1.1 Placement of portable fire extinguishers shall be in accordance with 13.6.8 unless otherwise permitted by 28.1.6.1.1.1.2(A), 28.1.6.1.1.1.2(B), and 28.1.6.1.1.1.3. [303:6.2.1.1]

28.1.6.1.1.1.1 Placement of portable fire extinguishers on piers and along bulkheads where vessels are moored or are permitted to be moored shall meet the following criteria:

(1) Extinguishers listed for Class A, Class B, and Class C fires shall be installed at the pier/land intersection on a pier that exceeds 25 ft (7.62 m) in length.
(2) Additional fire extinguishers shall be placed such that the maximum travel distance to an extinguisher does not exceed 75 ft (22.86 m). [303:6.2.1.1.1]

28.1.6.1.1.1.2 Fuel-Dispensing Areas.

(A) Portable fire extinguishers that meet the minimum requirements of 13.6.7 for extra (high) hazard type shall be installed on two sides of a fuel-dispensing area. [303:6.2.1.1.2.1]

(B) On piers or bulkheads where long fueling hoses are installed for fueling vessels, additional extinguishers installed on piers or bulkheads shall meet the requirements of 13.6.7 for extra (high) hazard type and 28.1.6.1.1.1. [303:6.2.1.1.2.2]

28.1.6.1.1.1.3 All extinguishers installed on piers shall meet the rating requirements set forth in 13.6.7 for ordinary (moderate) hazard type. [303:6.2.1.1.3]

28.1.6.1.2 Maintenance. All portable fire extinguishers shall be maintained in accordance with 13.6.9 and shall be clearly visible and marked. [303:6.2.2]

28.1.6.2 Fixed Fire-Extinguishing Systems.

28.1.6.2.1 Buildings on Piers.

28.1.6.2.1.1 Buildings in excess of 500 ft^2 (46 m^2) that are constructed on piers shall be protected by an approved automatic fire-extinguishing system unless otherwise permitted by 28.1.6.2.1.2 or 28.1.6.2.1.3. [303:6.3.1.1]

28.1.6.2.1.2 Buildings of Type I or Type II construction, as specified in Section 4.3 of NFPA 220, *Standard on Types of Building Construction*, and without combustible contents shall not be

required to be protected by an automatic fire-extinguishing system. [303:6.3.1.2]

28.1.6.2.1.3* Existing facilities shall not be required to be protected by an automatic fire-extinguishing system where acceptable to the AHJ. [303:6.3.1.3]

28.1.6.2.2* Buildings Exceeding 5000 ft² (465 m²).

28.1.6.2.2.1 Marina and boatyard buildings in excess of 5000 ft² (465 m²) in total area shall be protected by an approved automatic fire-extinguishing system unless otherwise permitted by 28.1.6.2.2.2. [303:6.3.2.1]

28.1.6.2.2.2* Existing facilities shall not be required to be protected by an automatic fire-extinguishing system where acceptable to the AHJ. [303:6.3.2.2]

28.1.6.2.3 Combustible Piers and Substructures.

28.1.6.2.3.1 Combustible piers and substructures in excess of 25 ft (7.62 m) in width or in excess of 5000 ft² (465 m²) in area, or within 30 ft (9.14 m) of other structures or superstructures required to be so protected, shall be protected in accordance with Section 4.3 of NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, unless otherwise permitted by 28.1.6.2.3.2, 28.1.6.2.3.3, or 28.1.6.2.3.4. [303:6.3.3.1]

28.1.6.2.3.2 Fixed piers shall not be required to be protected as specified in 28.1.6.2.3.1 where the vertical distance from the surface of mean high water level to the underside of the pier surface does not exceed 36 in. (914 mm). [303:6.3.3.2]

28.1.6.2.3.3 Floating piers shall not be required to be protected as specified in 28.1.6.2.3.1 where the vertical distance from the surface of the water to the underside of the pier surface does not exceed 36 in. (914 mm). [303:6.3.3.3]

28.1.6.2.3.4* Existing facilities shall not be required to be protected by an automatic fire-extinguishing system where acceptable to the AHJ. [303:6.3.3.4]

28.1.6.2.3.5 Indoor Rack Storage.

28.1.6.2.3.5.1* Where boats are stored on multilevel racks in buildings, an approved automatic fire-extinguishing system shall be installed throughout the building unless otherwise permitted by 28.1.6.2.3.5.2 or 28.1.6.2.3.5.3. [303:6.3.4.1]

28.1.6.2.3.5.2 An automatic fire-extinguishing system shall not be required for buildings less than 5000 ft² (465 m²) having multilevel racks where provided with one of the following:

(1) An automatic fire detection and alarm system supervised by a central station complying with *NFPA 72*
(2) An automatic fire detection and alarm system supervised by a local protective signaling system complying with *NFPA 72*, if the provisions of 28.1.6.2.3.5.2(1) are not technically feasible
(3) A full-time watch service if the provisions of 28.1.6.2.3.5.2(1) are not technically feasible [303:6.3.4.2]

28.1.6.2.3.5.3* Existing facilities shall not be required to be protected by an automatic fire-extinguishing system where acceptable to the AHJ. [303:6.3.4.3]

28.1.6.2.3.5.4 The design of automatic sprinkler systems shall comply with the provisions of Chapter 12 of NFPA 13, for Group A Plastics stored on solid shelves. [303:6.3.4.4]

28.1.6.2.4* An approved water supply shall be provided within 100 ft (30 m) of the pier/land intersection or fire department connection serving fire protection systems. [303:6.3.5]

28.1.6.2.5 Access between water supplies and pier/land intersections or fire department connections shall be by roadway acceptable to the AHJ. [303:6.3.6]

28.1.6.3 Fire Standpipe Systems.

28.1.6.3.1 Class I standpipe systems shall be provided for piers, bulkheads, and buildings where the hose lay distance from the fire apparatus exceeds 150 ft (45 m). [303:6.4.1]

28.1.6.3.2 Standpipe systems, where installed, shall be in accordance with Section 13.2, except for the provisions identified in 28.1.6.3.3 through 28.1.6.3.6. [303:6.4.2]

28.1.6.3.3 Hose racks, hoses, and standpipe cabinets shall not be required on piers and bulkheads. [303:6.4.3]

28.1.6.3.4 Supply piping for standpipes on piers and bulkheads shall be sized for the minimum flow rate for Class II systems. [303:6.4.4]

28.1.6.3.5 Manual dry standpipes shall be permitted. [303:6.4.5]

28.1.6.3.6 Flexible connections shall be permitted on floating piers where acceptable to the AHJ. [303:6.4.6]

28.1.6.4 Hydrants and Water Supplies. Hydrants and water supplies for fire protection in marinas and boatyards shall be provided in accordance with Section 13.2, Section 13.3, and 13.5.1. [303:6.6]

28.1.6.5 Fire Detectors.

28.1.6.5.1 Fire detection devices and installation shall be in accordance with Section 13.7. [303:6.11.1]

28.1.6.5.2 Fire detectors shall be installed in the following interior or covered locations unless those locations are protected by a fixed automatic sprinkler system installed in accordance with NFPA 13:

(1) Rooms containing combustible storage or goods
(2) Rooms containing flammable liquid storage or use
(3) Rooms containing battery storage or maintenance
(4) Rooms containing paint and solvent storage or use
(5) Areas used for enclosed or covered storage of vessels
(6) Areas used for enclosed or covered maintenance of vessels
(7) Areas used for public assembly, dining, or lodging
(8) Kitchens and food preparation areas
(9) Dust bins and collectors
(10) Inside trash storage areas
(11) Rooms used for storing janitor supplies or linens
(12) Laundry rooms
(13) Furnace rooms [303:6.11.2]

28.1.7 Wet Storage and Berthing.

28.1.7.1 Each berth shall be arranged such that a boat occupying the berth can be removed in an emergency without the necessity of moving other boats. [303:7.1.1]

28.1.7.2 Access to all piers, floats, and wharves shall be provided for municipal fire-fighting equipment. [303:7.1.2]

28.1.7.3* Electrical lighting shall be provided to ensure adequate illumination of all exterior areas, piers, and floats. [303:7.1.3]