

**City of Portland
Fire Department
Rules and
Regulations**

Revised Edition November 28, 2016



City of Portland
380 Congress Street
Portland, Maine 04101

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Chapter 1 Administration

- 1.1 Authority.** This document is promulgated pursuant to Chapter 10 of City Code.
- 1.1.1 Chapter 2.** City Code 10-31.
- 1.1.2 Chapter 3.** City Code 10-22.
- 1.1.3 Chapter 4.** City Code 10-22.
- 1.1.4 Chapter 5.** City Code 10-106.
- 1.1.5 Chapter 6.** City Code 10-68.
- 1.1.6 Chapter 7.** City Code 10-22.
- 1.1.7 Chapter 8.** City Code 10-93.
- 1.2 Title.** The title of this document is the *City of Portland Fire Department Rules and Regulations*.
- 1.3 Definitions.** The definitions contained in this document shall apply to the terms used in this standard. Where terms are not defined herein they shall be as defined in NFPA official definitions.
- 1.4 References.** Where a colon is used within a reference within this document, the designation preceding the colon represents the NFPA document number and the number following indicates the section of that document. (I.e. NFPA 101:A.1.1 refers to Annex A.1.1 of NFPA 101, *Life Safety Code*.)

Chapter 2 Private Mains & Fire Hydrants

2.1 Administration.

- 2.1 **Scope.** This Standard shall apply to all new and existing private fire service mains and hydrants and their associated fixtures.
- 2.2 No person, other than a person authorized to do so by the fire chief, shall use, open, or otherwise tamper with a public or private fire hydrant.
- 2.3 No person shall shovel, blow or otherwise move snow or ice onto or around any hydrant, public or private, in such a manner as to decrease or restrict access to such hydrant.

2.2 Definitions. The definitions contained in this section shall be as defined in NFPA official definitions.

2.3 New Fire Hydrants. Any hydrant installed, replaced or upgraded shall meet all standards utilized by the Portland Water District at the time of such installation, NFPA 24, *Standard for Installation of Private Fire Service Mains and Their Appurtenances*, and Section 2.4.

2.4 Existing Fire Hydrants. Existing, private fire hydrants shall meet all requirements of section 2.4 of these rules or be upgraded in accordance with Section 2.3 of these rules.

2.1 The hydrant shall open right (clockwise from the top).

2.2 The operating nut shall be pentagon in shape with the following dimensions: Top 1-13/16" tapering to 1-7/8" on bottom.

2.3 Nozzles shall be:

2 each – 2 1/2" National Standard Thread (also known as National Hose - NH)

1 each – 4 1/2" National Standard Thread

2.4 The hydrant shall be accessible with center of the nozzles between 18" and 36" above grade.

2.5 Hydrants shall be painted as follows:

Bonnet Flange

Part	Color
Upper barrel	Red
Bonnet	Gray
Caps	Silver
Bonnet flange	Per Table

Flow (gpm)	Class	Color
< 500	C	RED
500-999	B	ORANGE
1000-1499	A	GREEN
≥1500	AA	LIGHT BLUE

2.6 The top of the hydrants shall be marked as follows:

Each hydrant shall have a 3" high black number on the bonnet starting sequentially with 1 at the most remote hydrant from the complex or street entrance.

High pressure hydrants (static pressures ≥ 125 psi) shall be marked HP- with 3" high black letters before the hydrant number (ex. HP-1, HP-2, etc.)

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- 2.5 Private Main & Hydrant Maintenance.** All private fire mains and hydrants shall be maintained in accordance with NFPA 25 and documentation provided to the Fire Department annually on the Fire Department's approved forms. (See Appendix A)
- 2. .1** The *Test and Maintenance Report – Private Fire Hydrant* shall be completed and submitted as a pdf annually in the month of July.
- 2. .2** An up to date pdf plot plan showing location of private mains, their appurtenances, and hydrants shall be provided to the Fire Department. In addition to PIV and OS&Y valves, hydrants shall be numbered on the map to correspond with the number to be painted on the hydrant or marked on the valve and the inspection report paperwork.
- 2. .3** All valves, including check valves, must be inspected for correct operation within the past 5 years. Lack of documentation will be considered evidence of not being inspected.
- 2.6 Required Fire Flow.** Required fire flow as determined by NFPA 1 shall be developed through approved fire hydrants.
- 2. .1** Minimum hydrant flow shall be 1,000 GPM unless approved by the Fire Prevention Bureau.
- 2.7 Hydrant Locations.** Hydrant spacing shall be as determined by the current adopted edition of NFPA 1 Fire Code or as determined by the AHJ.
- 2. .1** Private fire hydrants shall not be located within 40' of the structure being protected without prior approval of the Fire Prevention Bureau.

CITY OF PORTLAND, MAINE - FIRE PREVENTION BUREAU

Test and Maintenance Report - Private Fire Hydrant

Property/Business Information: Chart: _____ Block: _____ Lot: _____
 Property Address: _____ Zip Code: _____
 Hydrant # / Location(attach map): _____/
 Business/Owner Name: _____
 Contact Person: _____ Phone No: _____
 Mailing Address: _____ Zip Code: _____

Test Type	
New Installation	[]
Annual	[]
5 Year Flow Test	[]
Other	
Describe:	

Please be advised that we (owner / contractor) have made the following maintenance and test of the fire hydrant in accordance with National Fire Protection Standards 25, 24 and 291. This form must be completed for each hydrant located on the premises.

CONTACT THE PORTLAND WATER DISTRICT TO COORDINATE PRIOR TO FLOWING ANY FIRE HYDRANT

Report of private fire hydrant service condition (new installation, annual and 5-year flow test):

Criteria	Status (Pass/Fail)	Corrective Action (Identify)
Accessibility (clear/unobstructed space all around Private fire hydrant shall be no less than three feet)		
Leaks in outlets or at top of hydrant (no leakage allowed)		
Proper drainage from hydrant barrel		
Cracks in hydrant barrel/flange		
Tightness of outlets (wrench tight)		
Worn or incorrect outlet threads		
Worn hydrant operating nut		
Hydrant has 4 1/2" steamer port		

IF THE PRIVATE FIRE HYDRANT IS FOUND NOT SERVICEABLE, IMMEDIATELY NOTIFY THE DISPATCH CENTER AT 874-8576, COVER AND SECURE THE HYDRANT WITH A BAG, AND THEN NOTIFY FIRE PREVENTION AT 874-8400.

Barrel Flow Test (new installation or annual):

Checked boxes below indicate "yes"

Hydrant fully opened [] All foreign material cleared []
 Flow duration greater than one minute [] Barrel is plugged and pumped out []

Maintenance (new installation or annual):

Weeds and obstructions cleared from within three feet of hydrant [] Hydrant caps and threads inspected []
 Rust and scale removed [] Lubricated [] flagged []

Marking (new installation or annual):

Painted [] (Bonnet - Gray) (All paint shall be Rust-Oleum brand or equal)
 (Caps- Silver)
 (Barrel- Red)
 (Bonnet Flange - per table)

Flow (gpm)	Class	Color
< 500	C	RED
500-999	B	ORANGE
1000-1499	A	GREEN
≥1500	AA	LIGHT BLUE

3" red hydrant number painted on street side of the bonnet - starting with 1 at the furthest hydrant from the complex or street entrance
 High Pressure Hydrants (static pressures ≥ 125 psi) shall be marked "HP" before the hydrant number (ex. HP-1, HP-2, etc.)

Flow test (new installation, once every five years thereafter, or if previous flow report not available):

Hydrant flow testing per NFPA 24 Annex C. Attach NFPA Hydrant Flow Test Report (See NFPA 24 Figure C.4.11.2)

Certification: I hereby certify the foregoing data to be correct and the statements to be true.

Testing company: _____ Phone No: _____ FAX No: _____

Address: _____ City: _____ State: _____ Zip Code: _____

Tester's name (print): _____ Tester's signature: _____

Test date: ____/____/____ Contractor's Lic. # _____
 M M D D Y Y

E-MAIL COMPLETED FORM(S) AND MAP TO fireprevention@portlandmaine.gov

Chapter 3 Fire Department Access Equipment**3.1 Administration.**

3.1 Scope. This Section shall apply to correct selection, placement and maintenance of Fire Department Access Equipment.

3.2 Where required.

3.1 Knox Boxes are required for all facilities with fire alarm or suppression systems.

3.2 Gated facilities shall be in accordance with Section 3.6 of these rules.

3.3 Installation Requirements.

3.1 Capacity. Capacity of Knox Boxes should not exceed rated capacity.

3.2 Applications. Knox Box equipment can be obtained online at www.knoxbox.com.

3.4 New Installations.

3.1 Unhinged Knox Boxes (lift-off doors) are not authorized.

3.2 Commercial buildings and residential buildings without a master key system for all units shall utilize 4100 or 4400 Series Knox Boxes with single lock at the principal entrance used by the Fire Department, as authorized by the Fire Prevention Bureau. Accessory boxes for sprinkler access only shall be permitted to be the 3200 Series hinged Knox Box. Residential buildings with a master key system throughout shall be permitted to use the 3200 Series hinged Knox Box.

3.3 The base of the Knox Box shall be mounted 5' from the walking surface immediately adjacent to the door.

3.5 Existing Installations. Existing Knox Boxes shall be located no more than 6 feet from the walking surface immediately adjacent to the door.

3.6 Gates. Manual gates shall utilize Knox Padlocks for access. Electric gates shall utilize Knox Key Switch part number 3502; or where authorized by the Portland Fire Department a Click2Enter gate access system may be approved.

3.7 Maintenance Requirements. Installation, maintenance and repair of Fire Department Access Equipment is the responsibility of the owner.

3.8 Contents. Each Knox Box shall contain 2 sets of the following keys:

Building keys including access and unit keys.

Fire alarm.

Sprinkler.

Chapter 4 Building, Stair, Suite and Room Designation

4.1 Administration.

4.1 Scope. This Standard shall apply to all new buildings.

4.2 This Standard shall apply to existing buildings where not deemed impractical by the AHJ.

4.3 Existing buildings undergoing Reconstruction shall comply with this standard.

4.4

4.2 Definitions. The definitions contained in this section shall be as defined in NFPA Official Definitions as found in Chapter 3 of each applicable Code or Standard.

4.1 *Transient* shall mean use by the same individual for 7 days or less.

4.3 Buildings. Buildings with a common street address shall be designated with a letter.

4.1 Signs shall be located in a position readily visible as approaching from the main access and approved by the Fire Department. Signs shall be illuminated or retro reflective on a contrasting background and the letter(s) size shall be approved by the Fire Department.

4.2 Street Address shall be clearly marked on the front of the building and building sign as approved by the Fire Department.

4.4 Stairs. Stairs shall be designated by letter.

4.1 The primary stair as determined by the Fire Department shall be *Stair A*.

4.2 Stair signage shall comply with NFPA 101:7.2.2.5.4 with the exception of existing, approved signs.

4.5 Floors. Floors shall be designated as follows:

The floor at the level of Fire Department access shall be *Floor I*.

Floors above the level of Fire Department access shall designated with numerals increasing in an upward arrangement from *Floor I*.

Mezzanine levels may be designated *Floor M*.

The floor below the level of Fire Department access shall be designated *Floor B* or *Basement*.

Floors below *Floor B* shall be designated *Sub-Basement*.

If there is more than one *Sub-Basement* floor they shall be numbered sequentially starting with *Sub-Basement 01*.

4.6 Suites & Units. Commercial Suites shall be designated as approved by the Fire Department. In single floor buildings letter designations shall be acceptable.

4.1 Residential Units shall be designated using numerals.

4.2 The first numeral of each residential unit shall be the floor designation.

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- 4.3 In single floor buildings the floor designation shall be omitted.
 - 4.7 **Rooms.** In non-residential commercial buildings rooms shall be designated starting with the floor or Suite designation.
 - 4.1 Signage shall be provided that indicates the following spaces:
 - Electrical,
 - Boiler and/ or physical plant,
 - Fire Alarm Control Panel,
 - Elevator Machine Room,
 - Hazardous Areas,
 - Basement/ Sub-Basement Access.
 - 4.8 **Special Signs.** Special signs shall comply with the requirements of the *Life Safety Code*.
 - 4.1 Secondary exit doors of mercantile occupancies, and other occupancies as determined by the Fire Prevention Bureau, shall have signs stating FIRE EXIT – DO NOT BLOCK.
 - 4.2 Residential buildings with elevators or more than 4 dwelling units per floor shall have signs indicating direction of travel to each unit from the elevator lobby, primary stair, and at the end of each corridor serving more than 2 dwelling units.
 - 4.9 **Stairway Identification shall be in accordance with NFPA 101: 7.2.2.5.4.**

Chapter 5 Emergency Alarm Systems**5.1 Administration.**

5.1 Scope. The scope of this standard shall be the same as NFPA 72, *National Fire Alarm and Signaling Code*, 2010 edition and NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, 2009 edition.

5.2 All signaling systems for the protection of life and property shall conform to NFPA 72, *National Fire Alarm and Signaling Code*, 2010 edition, including the Annexes thereof; NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, 2009 edition; and this standard.

5.3 Where the requirements of NFPA 72, NFPA 720, or this standard are different, the more stringent shall apply.

5.4 A *certificate of fitness* is required for all companies engaged in programming, certifying, inspecting or servicing of commercial life safety signaling systems; or applying for a life safety signaling system permit.

5.5 Permits. In addition to an electrical permit, life safety signaling system permits shall be required for all new signaling systems for the protection of life and property, and for renovation of any existing system effecting more than 5 devices or replacing a panel that is not the manufacturer's listed direct replacement. A life safety signaling system permit is not required for single- or multiple-station alarms or household alarm systems.

5. .1 Life Safety Signaling System Permits shall be pulled by a *Master Fire Alarm Company*.

5. .2 All applications for life safety signaling system permits shall be made at the building inspection office on forms provided by the Fire Prevention Bureau. New forms shall be downloaded for every new application. All information requested on the forms shall be completed when applicable to the proposed installation and all supportive documentation provided before the permit can be reviewed.

***Editor's Note:** A copy of such forms may be obtained at <http://www.portlandmaine.gov/fireprevention>

5. .3 Any application for a life safety signaling system shall include the following submitted in an approved format:

Designer qualifications;

Scope of work;

Complete descriptive data indicating "UL" listings (or other approved listing organization) for all system components (specific component model shall be called out on cut sheets);

Input/Output matrix (see NFPA 72:A.14.6.2.4(9));

A complete wiring/ riser diagram for all components being connected to the system (specific device shall be called out);

Floor plans indicating the placement of all equipment (specific device shall be called out);

Annunciator details showing the labeling of all zones;

Battery and voltage drop calculations.

5. .4 Any additions or modifications from approved plans will require the submission of an amendment and approval from the fire department.

- 5.2 Definitions.** The definitions contained in this section shall apply to the terms used in this standard. Where terms are not defined in this section, they shall be as defined in NFPA official definitions.

Electrician is a tradesperson that provides services within the scope of NFPA 70, *National Electrical Code*, and in compliance with 32 M.R.S.A., Chapter 17, section 1101 et seq.

Fire Alarm Technician shall mean an individual trained and qualified as required by 5.3.11.1.3 of these rules.

High-rise shall mean a building where the floor of an occupiable story is greater than seventy five (75) feet above the lowest level of fire department vehicle access as determined by the AHJ.

Life Safety Signaling System is an Emergency Communications System, as defined by NFPA 72, *National Fire Alarm and Signaling Code*, used to indicate the presence of smoke, fire, gas or other emergency condition hazardous to life, not including security.

Master Fire Alarm Company is a company authorized by Certificate of Fitness to operate within the scope of NFPA 72, *National Fire Alarm and Signaling Code*, or NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, and shall be authorized to submit permit applications and to program, certify, inspect and service life safety signaling systems.

Supervised shall mean a system or device that is monitored for all alarm, trouble and supervisory signals by an approved, UL listed central or remote station.

- 5.3 Fundamentals.** This rule shall apply to new and existing life safety signaling systems.

5.1 There shall be only one life safety signaling system in a building or structure.

5.2 A life safety signaling system shall cover only one building or structure.

5. .1 The requirements of 5.3.2 of these rules may be waived at the discretion of the Portland Fire Department in a campus type setting under common ownership provided that each building has its own full function annunciator and alarm number.

5.3 All structures, as herein defined, shall be provided with some level of early warning, installed and maintained as detailed by this ordinance and other referenced publications. The intent of this ordinance is to provide early warning to all persons where danger from an emergency condition may not be immediately evident, to allow those persons to safely evacuate the area and/or take other appropriate action.

5.4 The Fire Prevention Bureau shall review each building permit application for all structures except one (1) and two (2) family homes, to determine the need and extent of life safety signaling system protection.

5.5 The level of protection required shall be based on the size and type of construction, occupancy classification (as determined by NFPA 101) and building contents.

5.6 Life safety signaling systems may be required in structures not specifically required to be protected by other sections of these standards to offset exit deficiency, mixed occupancies or other safety situations not otherwise addressed.

5.7 At the discretion of the Fire Chief, state of the art alternate fire protection systems may be accepted as an equivalent substitute to the life safety signaling systems detailed in these standards.

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- 5.8 Life safety signaling systems shall be installed where required by the Life Safety Code, Fire Code, other adopted codes, and for special structures as determined by the Fire Prevention Bureau.
- 5.9 **New life safety signaling systems and work**
- 5.9.1 All new signaling systems shall be addressable, unless otherwise approved by the AHJ.
- 5.9.2 Application for a life safety signaling system permit where a Control Panel will be replaced with a panel that is not a manufacturer's direct replacement shall require the system comply with the requirements for new installation. Control panels shall not be extended beyond the manufacturer's listed capabilities. Existing conventional control panels shall provide no less than one alarm initiation zone per tenant or suppression system initiation device.
- 5.9.3 A conventional system shall be permissible provided there is no more than one initiating device per initiating device circuit and only 80% of initiating device circuits are used when the panel is installed (20% expansion possible).
- 5.9.4 Existing apartment buildings may use conventional heat detectors on an Initiating Device Circuit inside each separate dwelling unit and connected to an addressable, indicating monitor module located at the primary dwelling unit door that is connected to an addressable panel. The monitor module shall supervise the Initiating Device Circuit for integrity. The FACP and annunciator shall indicate "Unit # Heat Detectors".
- 5.9.5 All control equipment must have transient protection devices to comply with UL864 requirements.
- 5.10 **Knox Box(s).** Knox Boxes shall be installed in accordance with with Chapter 3 of this document.. All keys required to operate the life safety signaling system shall be placed within the box.
- 5.11 **Personnel Qualifications.**
- 5.11.1 **System Installers and Service Personnel.**
- 5.11.1.1 Life safety signaling system installers and service personnel shall comply with NFPA 72 sec. 10.4.
- 5.11.1.2 Effective immediately, *Fire Alarm Technicians* shall be NICET or IMSA certified level I for interior fire alarm. Effective January 1, 2013, *Fire Alarm Technicians* shall be NICET or IMSA certified level II for interior fire alarm.
- 5.11.1.3 Programming, certification and commissioning of commercial life safety signaling systems shall be performed under the direct supervision of a *Fire Alarm Technician* that shall be on site for all such procedures, including system acceptance with the Fire Department, and shall sign all required documentation as required by NFPA 72, NFPA 720, and the Fire Department.
- 5.11.2 **System Designers.**
- 5.11.2.1 The system designer shall be responsible for the design of a signal system or the alteration of an existing signaling system.

***Editor's Note:** Due to the nature of the bid process utilized for some projects, and to reduce omissions prior to a bid, it is the policy of the Portland Fire Department to welcome meetings with the original system designer prior to the bid. It is expected that final documents such as battery and voltage drop calculations, and device

cut sheets may not be available at this meeting, but that all such documentation will be provided with the permit application and approved prior to any installation commencing.

5. . . .2 Life safety signaling system designers shall be NICET level 4. A State of Maine licensed Professional Engineer with a minimum five (5) years experience in fire alarm design may be alternately approved by the Fire Department as a life safety signaling system designer.

5. . . .3 Life safety signaling systems protecting high-rise buildings, atriums, buildings where the effects of stratification must be taken into effect, and other buildings as deemed necessary by the Fire Department shall be designed and stamped by a Fire Protection Engineer.

5.12 Installation and Service Companies

5. . . .1 Fire Alarm Companies complying with 32 M.R.S.A, Chapter 17, section 1101 et seq. shall be authorized to perform work within the scope of NFPA 70, *National Electrical Code*, and install single-station alarms, multiple-station alarms and household alarm systems without a *certificate of fitness* or signaling system permit. More specifically, electrical companies may install wiring, conduit, back boxes, single- and multiple-station smoke and carbon monoxide (CO) alarms, and make electrical connections. Please note that an electrical permit is required. Also, this authorization does not include design, programming, certification, or inspection of commercial life safety signaling systems that falls within the scope of NFPA 72, *National Fire Alarm and Signaling Code*, excepting chapter 29; or NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, excepting chapter 9.

5. . . .2 Companies engaged in the installation or servicing of life safety signaling systems shall ensure that personnel comply with 5.3.11.1 of these rules.

5.13 **Verification and Compliant Installation.** Completed life safety signaling system installations shall comply with the requirements of these rules and shall be certified by a *Fire Alarm Technician*. Verification shall meet the requirements of NFPA 72:10.18.2.4.

5. . . .1 A final inspection by the Portland Fire Department shall be required for any life safety signaling system permit and shall be coordinated with the suppression system installer. The inspection shall not be scheduled until the verification of compliant installation is completed.

5.14 **Record of Completion.** After the completion of installation, the *Master Fire Alarm Company* shall provide the Portland Fire Department with a pdf copy of the completed "Fire Alarm and Emergency Communication System Record of Completion" (See 72:10.18.2.1.1) before the "Certificate of Occupancy" can be issued.

5.15 **Protection of Wiring.** All fire alarm wiring shall be protected from vandalism in an approved manner.

5.16 **System Impairments.** Any life safety signaling system, including all peripheral devices, shall be maintained and kept operational at all times. Whenever any initiating device is activated and rendered inoperable, it shall be repaired or replaced within twenty-four (24) hours. Any other component needing repair or replacement shall be started within twenty-four (24) hours of disablement and continued until completed as parts are received.

5.17 **Documents Cabinet.** A fire alarm records cabinet shall be provided next to the Signal System Interface Panel when a life safety signaling system permit is required. The cabinet shall be keyed alike, and labeled "FIRE ALARM DOCUMENTS". With the exception of section 72:14.6.3, it shall contain all records listed in sections 72:10.18 and 72:14.6 for the life of the signaling system. In addition, the fire alarm permit card shall be affixed to the inside of the cabinet.

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- 5.4 Control Equipment.** This rule shall apply to new structures and any new work.
- 5.1** The signal system interface panel or a full function annunciator panel shall be placed at the primary point of entry as defined by the Fire Prevention Bureau.
- 5.2** Programmable systems shall be capable of being programmed onsite.
- 5.3** All control features shall be placed within the signal system interface panel or annunciator panel only.
- 5..1** All signal system controls shall be secured by a key. Locked room doors shall not be acceptable. Allen keys shall not be acceptable.
- 5..2** PIN codes shall not be acceptable.

Temporary exception: Existing apartment buildings extensively using commercial UL approved wireless detectors. Such systems shall have a locked Lexan cover keyed alike to the rest of the system and functions such as acknowledge, silence and reset shall be single button functions in so far as possible. This exception remains in effect until a commercial wireless fire alarm system is UL approved that does not utilize PIN codes.

- 5.4** All annunciators shall be full function.
- 5.5** Where required, drill switches shall activate the notification appliance circuits and door release functions. The FACP and annunciators shall indicate "DRILL". Any other alarm input shall over ride the drill function and operate all functions required, including transmission of the alarm to the fire department and indication of alarm point at the FACP and annunciators.
- 5.6** Any signal system interface panel which is placed within a space shall have the door leading to that space labeled with the words "Fire Alarm Control Panel".
- 5.7** Where two-way telephone communication service for fire department use is required by Chapter 10 of City Code and the fire department radio system is approved as an equivalent system, the Portland Fire Department may require an approved fixed repeater system that shall meet the interface requirements of the City of Portland's 800 mhz radio system. All such equipment shall be properly installed and regularly maintained, and the cost thereof borne by the property owner and shall be available for inspection and use of the City of Portland 24/7.
- 5..1** Where the Portland Fire department radio equipment fails to penetrate a building, the Fire Chief reserves the right to require a fixed repeater system complying with 5.4.7 of these rules.

5.5 Initiation Devices. This rule shall apply to new and existing installations.

- 5.1** The tripping of a duct detector or tamper switch shall activate a supervisory signal only and shall not sound the evacuation signals.
- 5.2** New detection devices located within concealed spaces or spaces deemed inaccessible by the Fire Prevention Bureau shall have an indicator visual to the firefighter from an adjacent normally occupied space approved by the Portland Fire Department.
- 5..1** The Portland Fire Department may require smoke detectors using alarm verification or multi-criteria technology where there is a likelihood of false alarms due to the environment of the space being protected.
- 5.3** Smoke detectors shall not be installed in bathrooms.

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- 5.4 Where new automatic fire detection is required, all areas that are part of a defined exit system (hallways, stairways, lobbies, etc.) and any areas prone to smoldering fires shall be protected with smoke detectors. All other areas shall be protected with heat detectors (NFPA 101:9.6.2.1).
- 5.5 New manual pull stations shall be reset with the same key as the fire alarm panel.
- 5.6 Design, Installation and maintenance of Carbon Monoxide (CO) Detection and Warning Equipment shall be in accordance with NFPA 720.
5. .1 Location of Carbon Monoxide (CO) Detectors and Alarms shall be in accordance with NFPA 720:5.5.5.3 and NFPA 720:9.4. Activation of a Carbon Monoxide detection device shall not transmit an alarm through the City master box system.
- 5.7 All automatic extinguishing systems shall be supervised by the life safety signal system.
- 5.8 All detection devices shall be protected against radio frequency activation.
- 5.9 New initiation devices shall be labeled with a unique identity number visible from the floor for tracking of maintenance.
- 5.6 **Signaling Devices.** This rule shall apply to new and existing installations.
- 5.1 The use of bells as a signal device is prohibited in any system.
- 5.2 The activation of the life safety signal system in all high-rise occupancies shall sound an audible and visible alarm on the floor of initiation, the floor above, and the floor below. Whenever any incident requires the activation of a floor connected to other floors by means of an unprotected vertical opening, the alarm activation shall be extended to include all floors so interconnected. If a second zone goes into alarm, then a general evacuation shall be sounded.
5. .1 The Portland Fire Department has the authority to require the evacuation alarm to sound through out a high-rise building where in the opinion of the Portland Fire Department, the building is not adequately compartmentalized.
- 5.3 All other structures shall sound a general evacuation throughout all floors unless otherwise approved by this office.
- 5.4 The use of chimes shall be prohibited in occupancies other than where sudden loud noises might cause panic or confusion to the occupants and there is no other acceptable method of staff notification available. Any occupancy using chimes as the signal devices must provide staff which is awake twenty-four (24) hours a day, be required to have a master box by City Code, and be approved by the Portland Fire Department.
- 5.5 The Portland Fire Department may require multi-lingual voice evacuation systems in all facilities using prerecorded voice evacuation systems. Prerecorded messages and alert tone(s) shall be approved by the Fire Prevention Bureau.
- 5.7 **Master Box Connections.** This rule shall apply to new and existing installations.
- 5.1 All new master boxes shall be connected to the City of Portland Public Safety Answering Point (PSAP) via an approved wireless master box in accordance with 5.8 of these rules.
- 5.2 All wireless master boxes shall be in accordance with 5.8 of these rules.

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- 5.3 Master Box Alarm Connections shall be approved by the AHJ..
- 5.4 New master box alarm systems shall have a drill switch complying with 5.4.5 of these rules.
- 5.5 Master box equipment shall be of the type approved by the AHJ.
- 5.6 Installation shall be pursuant to manufacturer and City of Portland requirements, rules and regulations.
- 5.7 Master box equipment shall not be capable of operation apart from the building signal system with the exception of exterior pull stations in accordance with 5.8.13 of these rules.
- 5.8 Each master box alarm number or zone shall not serve more than 100,000 square feet of building space, more than one building, more than one evacuation zone, or more than 6 stories. Water flow shall be a separate zone for new installations.
- 5.9 All wiring on the municipal side of the signal system interface panel shall be rigid or non-metallic conduit.
- 5.10 Existing Master Box Connections.**
- 5..1 Existing, approved master box connections shall be maintained in accordance with the standard in effect at the time of its installation and 5.7.10 of these rules. If unable to meet the requirements of 5.7.10 of these rules or when a fire alarm permit is required the connection shall be upgraded to meet the requirements of 5.7.2 of these rules.
- 5..2 Existing master box connections via City circuit shall have an approved City disconnect switch supervised by the FACP and annunciator.
- 5..3 Gamewell boxes shall have the trip coil supervised by the FACP.
- 5..4 Gamewell boxes shall be located immediately adjacent to the FACP.
- 5..5 Harrington Boxes are no longer approved.
- 5..6 Existing, approved master box connections by central station shall be grandfathered until a new fire alarm permit is required. Such connections shall comply with the 2005 edition of the *Fire Department Rules and Regulations, Section a. For Master Box Connections to Municipal System.*
- 5.8 AES Installation Standard.** This rule shall apply to new and existing installations.
- 5.1 Companies installing AES radio equipment shall be an approved AES vendor.
- 5.2 A fire alarm permit is required to install an AES master box.
- 5.3 Only Model 7788F or approved equal shall be used in the City of Portland Master Box system.
- 5.4 Installation shall comply with the manufacturer's published instructions.
- 5.5 The AES control unit shall be located in an approved, readily accessible and secure area. The area shall be suitable for proper smoke detection as required by NFPA 72. Height shall not exceed 5 feet from the floor to the top of the control unit.

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- 5.6 The AES control unit is considered supervising station transmitting equipment for the purpose of *Protection of Fire Alarm System* where required by NFPA 101:9.6.1.8.
- 5.7 A GRI TSW-01S tamper switch shall be installed to indicate the status of the AES control cabinet front cover. It shall be installed in series to transmit a supervisory signal to dispatch via zone 8.
- 5.8 Antenna location shall not require wiring to exceed a 50 foot cable run per UL and FM listings. Antenna cable shall be installed in EMT, metal conduit or flexible metal tubing.
- 5.9 Wiring between the FACP and AES control unit shall be 18 AWG where wiring resistance will permit and installed in an approved manner.
- 5.10 All programming of the AES transmitting equipment shall be done on site by personnel of the Fire Department Electrical Division. Off site and advance programming shall not be permitted.
- 5.11 Subscriber box numbers shall be assigned by the Fire Chief only after approval of a fire alarm permit.
- 5.12 AES Zones will be assigned per the fire alarm permit conditions.
- 5.1.1 Zones 1 and 3 through 7 are designated as alarm zones and utilized in accordance with 5.7.8 of these rules. Zone 1 is designated for water flow alarms where required. Zone 2 is reserved for City Disconnect. Zone 8 is reserved for the AES tamper switch.
- 5.1.2 Zones 1 through 7 shall be wired Class B with EOL resistors; any alarm will short the resistor. When wired properly a broken connection will transmit a supervisory signal to dispatch.
- 5.1.3 When City Disconnect is activated the FACP shall indicate a supervisory condition "City Disconnect" and transmit a City Disconnect alarm signal to dispatch. Function shall be accomplished by addressable monitor module(s), or if an addressable feature is not available City disconnect can be accomplished by multipole toggle switch or multi relay board, such as an Altronix RB610 as appropriate.
- 5.1.4 When zone 1 is in *City Disconnect* mode, zone 2 will indicate an alarm condition at dispatch. When zone 3 is in *City Disconnect* mode, zone 4 will indicate an alarm condition at dispatch. When zone 5 is in *City Disconnect* mode, zone 6 will indicate an alarm condition at dispatch. All other zones shall remain normal. Only the zone in *City Disconnect* shall be unaffected by alarm activity of the FACP. The FACP and annunciators shall indicate a supervisory signal: *City Disconnect* and the zone in disconnect (i.e. "City Disconnect: Water flow", "City Disconnect: Floors 1 – 6", "City Disconnect: Pulls and detectors".)
- 5.1.5 *City Disconnect* shall be secured by a key and located as a function key on the fire alarm interface panel; or as a switch within the locked FACP cabinet or other secured enclosure immediately adjacent to the FACP as approved by the Fire Prevention Bureau.
- 5.13 **Exterior Pull Stations for use with AES Wireless boxes.**
- 5.1.1 Exterior pull stations for use with wireless boxes shall be installed in accordance with 5.8.13 of these rules.
- 5.1.2 It shall be constructed with the following components using accepted industry practice:
- Gamewell shell 25777-4 or 23116-16.
 - Microswitch MD99-2.
 - City of Portland Lock Set.

Number plate 67007.

Reset instruction plate inside the shell.

All wiring shall be in rigid or non-metallic conduit.

Red light fixture VXWGHCR or approved equivalent.

5. . . 3 It shall be mounted apart from the building containing the AES transmitter and each pull station wired to a dedicated AES zone. The red light fixture shall illuminate upon activation of the pull station.

5. . . 4 Exterior pull stations do not require City disconnect.

5. 9 **Supervising Station Alarm Systems.** This rule shall apply to new and existing installations.

5. 1 Supervised station alarm systems shall have a drill switch complying with 5.4.5 of these rules.

5. . . 1 The Fire Prevention Bureau may in its sole discretion waive the requirements of 5.9.1 of these rules in buildings that most likely will not require a master box connection in the future.

**Editor's Note:* Non-mixed use apartment buildings with fewer than 20 dwelling units which would likely not be able to increase the number of units or change use would likely not require a master box connection in the future.

5. 2 **Managed Facilities-Based Voice Network (MFVN)**

5. . . 1 *Managed Facilities-Based Voice Network (MFVN)* shall comply with NFPA 72

5. . . 2 All equipment required to receive power from the protected premises shall comply with NFPA 72.

5. . . 3 All equipment required for MFVN and located at the protected premises shall be installed within 5 feet of the signal system interface panel, and be secured to prevent connection by other than the fire alarm system prior to such connection.

5. . . 4 Communications circuits for MFVN shall not have breaks prior to the cable modem at the protected premises. Special attention shall be given to NFPA 72:26.6.3.2.1.1.

5. 3 Supervising Station Alarm systems shall report alarms by point.

5. 10 **Maintenance.** This rule shall apply to new and existing installations.

5. 1 **Tampering with Fire Safety Equipment.** Tampering with life safety equipment is not permitted. Only authorized personnel shall activate, inspect, service, reset, or render any component of an emergency alarm system inoperative; and only after receiving authorization from the Fire Department by calling 874-8576 immediately prior to doing so.

5. 2 **Inspection Stickers**

5. . . 1 All signal systems shall have a current inspection sticker.

5. . . 2 Inspection stickers shall be acquired only by companies with a valid certificate of fitness for *Master Fire Alarm Company* from the Fire Prevention Bureau, and affixed to the fire alarm only by a *Fire Alarm Technician* complying with 5.3.11.1.3 of these rules.

5. .3 Inspection stickers shall not be affixed to signal systems that are non-compliant or deficient, and that do not have a service contract.

5. .4 Records for inspection stickers shall be kept on forms provided by the Fire Prevention Bureau and submitted quarterly.

***Editor's Note:** A copy of such forms may be obtained at <http://www.portlandmaine.gov/fireprevention>

5. .5 All inspection stickers and records remain the property of the Fire Prevention Bureau and shall be turned over upon demand.

5.3 Initiation Devices.

5. .1 Initiation devices shall be labeled with a unique identity number visible from the floor for tracking of maintenance. All such labeling shall be completed in the time frame established by NFPA 72 for which each device of the given type must have been tested.

***Editor's Note:** The intent is to have the labels completed at the same rate as the sensitivity testing which is required at intervals as long as 5 years. Therefore all devices should be labeled with in 5 years. (See NFPA 72:14.4.5.3.3).

5. .2 A log shall be kept indicating precisely which initiating devices have been tested.

5.4 Master Box Connections.

5. .1 Master box connections shall comply with 5.7 of these rules and be tested and maintained annually by the fire alarm company before affixing an inspection sticker.

5. .2 Trip levers shall not be removed for non-emergency purposes unless the master box is being permanently removed from service or to permit installation of an approved disconnect switch. When permitted, only Electrical Division or Fire Prevention personnel, or the on duty deputy chief may remove the trip lever.

5. .3 The fire alarm company shall schedule an appointment with the Electrical Division no less than 1 business day before testing a Gamewell master box or to verify compliance with 5.7.10 of these rules. Depending on work load longer lead times may be necessary.

5. .4 Master boxes with an approved Electrical Division sticker have been verified to have the correct disconnect arrangement and trip coil supervision.

5.5 Supervising Station Alarm Systems.

5. .1 The service company shall verify the communications method complies with this standard.

5. .6 The company responsible for servicing shall affix a sticker with their name and contact number.

Chapter 6 Suppression Systems

6.1 Administration.

6.1 Scope. This chapter applies to suppression systems.

6.2 Permits. Fire suppression permits shall be required for all new fire suppression systems and for sprinkler renovations effecting more than 20 heads.

6.1.3 Knox Box(s). Knox boxes shall be installed in accordance with Chapter 3 of this document

6.2 Supervisory and alarm signals.

6.1 All fire suppression systems installed in buildings having a fire alarm system shall be supervised.

6.3 Sprinkler systems.

6.1 All new installations (fire alarm) utilizing a supervised, automatic fire sprinkler system for automatic detection shall have water flow and zone supervision for each story in addition to the requirements of NFPA 13 or 13R.

6. .1 Sprinkler System Maintenance. Sprinkler system inspection tags shall not be affixed to systems that are deficient.

Exception: Sprinkler systems that are deficient may have a red inspection tag indicating so affixed to the main riser.

6.4 Fire Department Connections

6.1 Fire department connections shall be 2-1/2 inch NH.

6.2 A single 2-1/2 inch connection shall be used where piped to a 3 inch or smaller riser without exception (NFPA 13.6.8.1.3).

6.3 The location of FDCs shall be approved by the AHJ.

6.5 Standpipes.

6.1 Class I Standpipes shall be separate from sprinkler systems unless a combination system is approved in writing in advance by the Portland Fire Department.

6.2 Class I standpipes shall be wet systems except where piping is subject to freezing (NFPA 14:5.4.1.4).

6.3 Class I manual wet standpipes in sprinklered buildings shall be connected to the fire main where supplied by public water unless technically infeasible.

6.4 Threaded fittings for hose connections shall be NH for 2 ½” connection and NPSH for 1 ½” connection. Unless specifically required by City Code, Class I standpipes do not require 2 ½” x 1 ½” reducers.

6.5 Gauges.

6.6 Each 2 ½ discharge shall have a designated pressure gauge provided at each level.

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- 6.7 Gauges for Class I and III standpipe hose connections.** The Fire Department requires the installer to provide two Kochek 2 ½” NH 45 Degree Line Gauge [LG25-45] to the Fire Department for each new Class I and III standpipe. The Fire Department may waive this requirement if enough gauges are available for fire department standpipe kits and only with written approval of the Fire Prevention Bureau.
- 6.8** Minimum and maximum pressure limits for Class I automatic standpipe systems
- 6. .1** Maximum static pressure at 2 ½” hose discharges shall not exceed 100 psi.
- 6. .2** Minimum residual pressure at 2 ½” hose discharges shall be 65 psi at the required flow rate.
- 6.9** Required flow rates for Class I and III standpipes shall be in accordance with NFPA 14.
- 6.10** One 2 ½” FDC is required for each 250 gallons of required flow rate (NFPA 14:7).
- 6.11** Where a Class I manual standpipe system is provided, each hose connection shall be provided with a conspicuous sign that reads “MANUAL STANDPIPE FOR FIRE DEPARTMENT USE ONLY” (NFPA 14:5.4.2). Letters shall be red with a white background and shall be 2 ½” in height (NFPA 14).
- 6.6 Non-Water Based Fire Suppression Systems.** Reserved

Chapter 7 Roof Top Decks (Reserved)

Chapter 8 Recreational Outdoor Burning

- 8.1 Application.** This chapter shall apply to all recreational outdoor fires, except for fires that are contained within a) a commercially available or custom appliance that is typically sold and used for cooking; or b) a commercially available, Listed gas-burning appliance.
- 8.2 Definitions.** The following definitions shall apply to this Chapter.
- 8.2.1** Campfire shall mean any outdoor fire that is not contained within an outdoor fireplace or recreational fire appliance. This shall include fire pits, fire rings, or any other fire that is burned directly on the ground.
- 8.2.2** Outdoor fireplace shall mean any fireplace, as defined in NFPA 211 (2010), of a semi-permanent or permanent nature, that is constructed outside of a structure.
- 8.2.3** Recreational fire appliance shall mean any commercially available or constructed appliance that is typically sold and used for recreational fires, including chimineas and fire bowls. This shall not include fire rings or any appliances where the fire is burned directly on the ground.
- 8.3 Prohibition.** Burning is only allowed in the City of Portland under the following circumstances.
- 8.3.2** No burning may take place on days when the State Forest Division has classified the fire danger as more than a class 1 or 2 day.
- 8.3.3** No burning may take place when winds exceed 15 mph.
- 8.3.4** Only dry, clean, wood may be burned. The burning of construction material, rubbish, trash, leaves, and deadwood or tree cuttings accrued from normal property maintenance is prohibited.
- 8.3.5** All fires must be constantly attended by a competent adult over the age of 18 until such fire is extinguished.
- 8.3.6** For all fires, a garden hose connected to the water supply or other fire-extinguishing equipment must be readily available for use.
- 8.3.7** No visible smoke, sparks, or debris from outdoor burning may cross adjacent property lines.
- 8.3.8** All burning must comply with NFPA 1 (2009), and all other applicable laws, codes, and ordinances.
- 8.3.9** The AHJ shall be authorized to require any fire to be immediately extinguished if the burning is being conducted in violation of any law, regulation, or applicable code, or otherwise creates a hazardous condition.
- 8.4 Outdoor fireplaces and recreational fire appliances.** Burning in an outdoor fireplace or recreational fire appliance is only allowed under the following circumstances.
- 8.4.1** Outdoor fireplaces must be installed and operated in a safe manner, and in accordance with all applicable codes

and manufacturer's and/or installer's instructions.

- 8.4.2 All outdoor fireplaces must have an approved spark arrester, screen, or door.
- 8.4.3 Recreational fire appliances must be operated in a safe manner, and in accordance with all applicable codes and manufacturer's instructions.
- 8.4.4 All outdoor fireplaces and recreational fire appliances must be maintained in good repair and in a safe condition at all times.
- 8.4.5 All outdoor fireplaces and recreational fire appliances must be set back at least 15 feet from all structures, combustible material, and adjacent property lines.
- 8.4.6 No permit is required for fires in outdoor fireplaces and recreational fire appliances.

- 8.5 **Campfires.** Campfires are only allowed under the following circumstances.
 - 8.5.1 No campfire may be burned without a permit.
 - 8.5.2 Campfires must be in a pit and fire ring less than 3 feet in diameter with a pile less than 2 feet in height.
 - 8.5.3 Campfires shall be no closer than 25 feet from a structure, combustible material, and adjacent property lines
 - 8.5.4 Campfires may not take place on public property without the written permission of the appropriate government agency, or on private property without the written permission of the owner or owner's agent.