BUREAU OF FIRE PREVENTION
FIRE ALARM INSPECTION UNIT

INFORMATION BULLETIN
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Issuer:	Alex Spektor, Director, Fire Alarm Inspection Unit
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Effective Date:	Immediately
Purpose:	Application of Stand-Alone Sprinkler and Automatic Fire Suppression Subsystems in Multi-Hazard Locations.
Related Code Sections:	BC 904, FC 904, NFPA 72 as modified by Appendix BC Q106, Article 760 as modified by 1 RCNY 4000-06, NFPA 13 as modified by Appendix BC Q102

This bulletin replaces the previous version, dated 08-25-11. That document should no longer be used.

This bulletin incorporates changes to Sections 4.2, 4.3 and addresses numerous questions relating to the installation of sprinkler and automatic fire suppression subsystems in multi-hazard locations.
For the purpose of adequate uniformity, the inspectorial staff of the Fire Alarm Inspection Unit (FAIU) will implement the following operational guidelines:

1. Application of any alternative automatic fire-extinguishing system including, but not limited to carbon dioxide, clean agent, dry chemical and halon shall be permitted only for protection of a single fire zone or any other subdivision, approved by the Technology Management Unit (TMU), on the same floor.
2. Integration of any alternative automatic fire extinguishing or sprinkler subsystem, other than a conventional dry-pipe system, with the building-wide fire alarm control panel (fire command center or station) shall not be permitted.
3. Application of a sprinkler subsystem for multi-hazard locations shall be limited to the deluge, dry-pipe and pre-action type only.
4. A sprinkler subsystem shall be permitted for application in multi-hazard application on conditions, as follows:

4.1. **Zoning and Annunciation**

4.1.1. Multiple Fire Zones - Same Floor. A single control unit may be used to protect hazards that are located on the same floor in multiple fire zones or any other subdivisions approved by the Technology Management Unit (TMU) if any operated initiating device is visibly indicated at the control unit by the respective zone by annunciation, printout, or other approved means.

4.1.2. Multiple Fire Zones - Various Floors. A single control unit may be used to protect hazards that are located on various floors (two or more) at premises where total evacuation is required if any operated initiating device is visibly indicated at the control unit by the respective floor by annunciation, printout, or other approved means.

4.1.3. Multiple Fire Zones - Various Floors. A single control unit may be used to protect hazards that are located on various floors (two or more) at premises where staged evacuation is required if :

4.1.3.1. Each alarm, supervisory or trouble input to the control unit is transmitted to the control unit as a discrete point to allow identification of the floor and device location.

4.1.3.2. Each floor protected by a sprinkler subsystem is zoned separately for fire detectors, waterflow alarm-initiating pressure switches, manual release stations, supervisory attachments and release devices.

4.1.4. The size of a single detection zone shall not exceed 22, 500 ft². If a detection zone exceeds 22,500 ft² in area and undivided by smoke or fire barriers, zoning should be determined on a case-by-case basis and approved by TMU.

4.2. **Interface with Building-Wide Fire Alarm System**

4.2.1. The sprinkler control unit shall be monitored by the building-wide fire alarm system. The following zoned signals shall be transmitted by the control unit to the building-wide fire alarm control panel (fire command center or station):

4.2.1.1. If the system is configured as described in Subsection 4.1.1. or 4.1.2:

a) Common Alarm Signal – waterflow alarm-initiating pressure switch or smoke detector, thermal detector or manual release station;

b) Common Supervisory Signal – low air and valve tamper (if applicable);

c) Common Trouble Condition.

4.2.1.2. If the system is configured as described in Subsection 4.1.3, each alarm, supervisory or trouble input to the control unit shall be transmitted to the building-wide fire alarm control panel (fire command center or station) as a discrete point and the location of an operated initiating device shall be visibly indicated by floor, fire zone, or other approved subdivision.

Note: *The activation waterflow alarm-initiating pressure switch shall not initiate Phase 1 "Emergency Elevator Recall."*

4.2.2. In either case, the automatic or manual activation of the sprinkler control unit shall automatically actuate the alarm notification appliances and initiate all respective fire safety control functions (shutdown of the building fans, door release, etc.) consistent with sequence of operation approved for the building-wide fire alarm system.

4.3. **System Requirements**

4.3.1. Sprinkler Control Unit.

4.3.1.1. The control unit shall be listed for releasing service.

4.3.1.2. Where a pre-action sprinkler subsystem is used to protect the multi-hazard locations, the control unit shall be programmed for a single-interlock operation.

Exception:

The use of double-interlock systems is permitted only in areas subject to freezing.

4.3.1.3. An automatic smoke detection device connected to the building-wide fire alarm system shall be provided at the location of the sprinkler control unit where installed in an area that is not continuously occupied.

4.3.1.4. Where the control unit is not enclosed in a cabinet designed to prevent the entry of water, the control unit must be located outside the discharge area in a location readily accessible to the emergency responding personnel and approved by TMU.

4.3.1.5. A remote signaling visual device actuated upon any alarm condition in a sprinkler subsystem shall be provided for a control unit installed in a concealed location. The location of the unit and the protected area shall be prominently indicated at a placard secured directly below the signaling device.

4.3.2. Fire Alarm Inputs.

4.3.2.1. The activation of any manual, automatic, supervisory initiating device and trouble condition shall report to the control unit in individual zones for visual indication.

4.3.2.2. Each subdivided space within area protected by a pre-action or deluge sprinkler subsystem shall contain one or more automatic fire detectors installed in compliance with Chapter 5 of NFPA 72, 2002 (as modified by Appendix Q106).

4.3.2.3. All detection devices that are used to control the operation of smoke/fire dampers and fan shutdown shall be powered from and monitored by the control unit.

4.3.2.4. Where the raised floor of an information technology room (i.e., computer equipment rooms, server rooms) is used for installation of any power or equipment communication circuits, the underfloor area shall be provided with smoke detection device(s).

4.3.2.5. The cross-zoning or alarm verification of the smoke detectors is prohibited in the deluge and pre-action subsystems.

4.3.2.6. Each subdivided space within area protected by a pre-action or deluge sprinkler subsystem shall be provided with at least one manual release station (electric) installed in compliance with Chapter 5 of NFPA 72, 2002 (as modified by Appendix Q106) and located within 5 ft. of the exit doorway. The location and quantity of additional manual release stations (electric) should be engineered to provide maximum life safety and fire protection.

4.3.2.7. A permanent metal or engraved plastic signs indicating the controlled system shall be mounted above or beside each manual release station.

4.3.2.8. The shut-off valve (if any) in the connection of any alarm attachment to the pre-action (deluge, dry-pipe) valve shall be supervised. Removing the handle from the valve does not meet the intent of the supervision requirement.

4.3.2.9. A remote alarm indicator shall be provided for any supplemental fire detector that is installed beneath a raised floor. In an addressable system, installation of a Graphic Annunciator or detector address map that identifies the location of a detector in alarm will be considered as an acceptable alternative.

4.3.2.10. Where a single control unit is utilized to protect multi-hazards in buildings having large floor areas or unusual subdivisions with protected area separated by walls or partitions, a Graphic Annunciator, Detector Address Map or any other acceptable alternative may be required. The location and configuration of the Graphic Annunciator or Detector Address Map shall be approved by TMU.

4.3.3. Alarm Notification.

4.3.3.1. Installation of the alarm notification appliances associated with the pre-action, deluge and dry-pipe subsystem at premises provided with a building-wide fire alarm system shall not be permitted. A sufficient number of the audible and visible notification appliances connected to the building-wide fire alarm system shall be installed throughout the protected area.

4.3.3.2. In facilities without a building-wide fire alarm system a sufficient number of the audible and visible notification appliances connected to the deluge or pre-action system shall be provided throughout the protected area, as well as a connection to an approved central station.

4.3.4. System Outputs and Fire Safety Functions.

4.3.4.1. The sequence of operation of the sprinkler subsystem shall meet the design requirements and installation standard(s) utilized for the hazard.

4.3.4.1.1. Control of Smoke Spread:

i) The automatic shutdown of the self-contained units in the information technology rooms where a raised floor (if any) is not utilized for installation of power or equipment communication circuits on a smoke alarm is optional.

ii) In any information technology room where the space beneath the raised floor is utilized for power/communication cables and the underfloor area is ventilated by a self-contained unit(s), activation of an underfloor

smoke detector as described in Section 4.3.2.4 or duct smoke detector, if provided, shall initiate the fan shutdown function.

4.3.4.1.2. The automatic shutdown of the equipment and lighting circuits in the information technology rooms separated from other occupancies by fire-resistant walls, floors and ceilings is optional.

4.3.4.1.3. Pre-discharge time delays & abort switches are prohibited from use in the deluge and pre-action subsystems.

4.3.5. Power Source Requirements.

4.3.5.1. The primary and secondary power sources to a sprinkler subsystem shall conform to the respective provisions of Article 760 of the 2011 New York City Electrical Code.

4.3.6. Wiring.

4.3.6.1. The installation of the fire alarm wiring associated with the sprinkler subsystem shall conform to the respective provisions of Article 760 of the 2011 New York City Electrical Code.

4.3.6.2. The Class and Style of the initiating device and/or signaling line circuits shall be in accordance with the design specification and manufacturers' installation instructions.

4.3.6.3. The installation wiring including the release device circuit and connection to the building-wide system shall be monitored for integrity in accordance with the requirements of Section 4.4.7 of NFPA 72 (as modified by Appendix Q106).

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