

Narrative Report on a Clean Agent Fire Extinguishing System at:

**Verizon Wireless Suite
202 Woodford Street
Portland ME**

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Special Hazard Fire Suppression Systems Design
Hiller New England Fire Protection, Inc.

Fire Protection Systems Features

A new FM-200™ (HFC-227ea) gaseous, clean agent fire suppression/detection system has been designed to fulfill the requirements NFPA 2001, 2012 Edition. The purpose of the system is to enhance safety to life of occupants and property through early detection, fire suppression, and Building Fire Alarm notification.

The independent FM-200™ fire suppression system will be installed in compliance with NFPA Standard #2001, 2012 Edition. The area to be protected is described as the Telephone Equipment Room. The room consists of electronic cellular control equipment and related systems.

FM-200™ is a synthetic, environmentally friendly replacement alternative for Halon 1301. It is composed of carbon, fluorine and hydrogen and is safe for use in normally occupied areas. FM-200 extinguishes a fire by a combination of chemical and physical mechanisms without affecting the oxygen level.

FM-200™ has a zero ozone depletion potential and a low 30-year atmospheric lifetime. The extinguishing agent is distributed by the Great Lakes Chemical Corporation.

The design criterion for an occupied room is to develop an FM-200™ concentration between the acceptable limits of 6.25 % and 9 %. The Tel/Data Room has a total volume of approximately 1,749.00 cubic feet and requires a minimum discharge of 61 lbs of agent at 7%. A single 80 pound Kidde FM-200; cylinder filled with 64 pounds of agent will be supplied.

A new Notifier RP-2002 release control panel will provide complete supervision of the detection, extinguishing and audible components. The panel is equipped with emergency batteries that will provide a minimum of 24 hours of power in event of an AC failure. Power on, trouble and alarm lights on the alarm panel indicate the status condition of the fire suppression system at all times.

To detect fire in its incipient stages, two sensitive photoelectric type smoke detectors will be installed on the ceiling. It will be necessary for both smoke detectors to alarm before the FM-200™ system can discharge, typical for a cross-zoned arrangement. In accordance with guidelines set forth by the NFPA #72 and good fire protection practices, the detectors will be spaced at a maximum coverage of 250 square feet per detector.

As the FM-200™ extinguishing agent is considered a "Clean Agent"; an agent purge system is not required as per NFPA 2001, 2013 Edition. However local rules pertaining to the exhausting and venting of products of decomposition may apply.

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Located at the egress of the protected hazard will be a manual pull station and a dead man type system abort switch.

Alarm signals will consist of an alarm bell and horn/strobe signals to indicate the different stages of alarm. These signals will be located both in the space and near the Tel/Equipment Room entrance to alert personnel of systems condition. Upon release of the agent, strobe lights located outside of the hazard will operate to warn of the FM-200 discharge.

Sequence of Operation

Discharge of the suppression system into the Tel/Equipment Room can occur upon operation of any one of the following methods; automatically from the cross-zoned smoke detection system or manually by operating the electric remote control station located near the main point of egress.

Operation of any smoke detector will cause the following to occur: the systems alarm Horn / Strobe will pulse slow, the alarmed zone will be annunciated on the control panel, the alarmed detector's red status lamp will light, and the FM-200™ system will become pre-alarmed. At this time the HVAC system within the room will shutdown.

Activation of a second smoke detector will cause the following to occur: the system Horn / Strobe will pulse fast, signaling the start of the time delay period, Signals will be sent to the Building Fire Alarm system which will annunciate the alarm condition. The alarmed zone will be annunciated on the control panel displays and the alarmed detector's red status lamp will light. Following the expiration of a short, preset, 30 second time delay period, the FM-200™ system will discharge, annunciate the system fired light on the control panel cover and activate the System Release Strobe lights located outside of the room.

Operation of any of the electric Manual Release stations will operate the FM-200 System as above, except without a time delay period.

Any system trouble signal on the FM-200 Control Panel will be transmitted to the Building Fire Alarm system as well.

Acceptance Testing

The system installation will be reviewed in accordance with the NFPA 2001 section 4-7.2.5.1 and 4-7.2.5.2. We will thoroughly examine the hazard areas and recommend effective sealing of any potential leakage prior to the performance of the Room Integrity Test in accordance with section 4-7.2.3.

Maintenance Testing

A testing and maintenance program which meets the requirements of NFPA Standard 2001 and the equipment manufacturer will be required to be under contract with a licensed, factory trained and authorized special hazards systems contractor.

Semiannually -System shall be thoroughly inspected and tested for proper operation, including checking of agent pressure of the cylinders. This must be performed by competent personnel.

Annually -The protected enclosure shall be thoroughly inspected to determine if penetrations or other changes have occurred that could adversely affect agent leakage, as well as, the normal inspection procedures outlined above.

End of Report

