DPD SFD

Joint Ruling
DPD Director's Rule 7-2014
SFD Administrative Rule 9.06.14

Applicant: CITY OF SEATTLE Department of Planning and Development Seattle Fire Department	**Page** 1 of 5	**Supersedes:** DPD DR 17-2005 SFD Adm Rule 9.08.05
	Publication: 7/3/14	**Effective:** 8/12/14
Subject: Sprinkler Systems and Fire Alarms for Elevator Machinery Rooms, Control Rooms, Hoistways and Pits	**Code and Section Reference:** Seattle Building Code Seattle Fire Code	
	Type of Rule: Technical requirements	
	Ordinance Authority: SMC 3.06.040	
	Approved John H. Nelsen, Fire Marshal, SFD	**Date** 8-11-14
Index: Building Code Elevators	**Approved** Diane M. Sugimura, Director, DPD	**Date** 8.11.14

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2014 AUG 12 PM 4: 21
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BACKGROUND AND PURPOSE

The purpose of this rule is to clarify the requirements for automatic sprinkler systems in elevator machine rooms, control rooms, hoistways and pits. Seattle codes only require elevator machine rooms to be protected by sprinklers when required by the building official. The ASME elevator rules, adopted in Chapter 30 of the Seattle Building Code, prohibit automatic sprinklers in elevator machine rooms unless they are provided with automatic power disconnect devices also known as shunt trips. However, automatic power disconnect devices may cause serious problems for firefighters.

This Rule identifies the requirements of the Department of Planning and Development (DPD) and Seattle Fire Department relating to sprinklers, fire alarms, and controls for these spaces.

NOTE: Seattle's rule is different than Washington State's rules.

RULE

This rule applies to buildings protected throughout with an automatic sprinkler system.

1. ALL BUILDINGS. All sprinklered buildings are required to comply with Section 1.

   1.1. Smoke detectors, (not heat detectors), shall be installed at each elevator lobby or floor level served by the elevator, and in each elevator machine room and control room in accordance with NFPA 72. Upon activation, these detectors shall initiate Phase I recall and activate a fire alarm.

   1.2. If the elevator driving machine is located at the top of the hoistway or located in the elevator pit area, 135 degree fixed temperature heat detector(s) shall be located within 18 inches of the motor and sprinkler head(s). The heat detector(s) shall initiate Phase I recall and activate a fire alarm.

   1.3. In buildings having a fire alarm system, the detectors shall report to the fire alarm panel as a separate zone (or initiating device identifier for addressable fire alarm systems) for each machine room, control room and secondary sheave area provided with a detector.

   1.4. In buildings without a fire alarm system, the detectors shall initiate an audible and visual alarm located at the recall floor near the entrance to the elevators. The alarm shall have a sign with 1-inch letters in high contrast with the background stating, "ELEVATOR FIRE ALARM".

2. **BUILDINGS WITH ELEVATORS USING COMBUSTIBLE SUSPENSION MEANS.** Sprinklered buildings with combustible suspension means shall comply with Section 2.

   2.1 Sprinklers shall be installed at the top and bottom of elevator hoistways where the suspension means are of combustible material such as noncircular elastomeric-coated or polyurethane-coated steel belts. Sprinklers at the top of elevator hoistways shall be of an intermediate temperature classification.

   2.2 The sprinklers in the elevator hoistway are not required if the suspension means provide at least an FT-1 rating when tested to the vertical burn test requirements of UL 62, *Flexible Cords and Cables*, and UL 1581, *Reference Standard for Electrical Wires, Cables, and Flexible Cords*.

3. REQUIREMENTS FOR SPRINKLERED MACHINE ROOMS AND CONTROL ROOMS. Buildings with sprinklered machine rooms or control rooms are required to comply with Section 3.

3.1 A sprinkler supply line to each elevator machine room and control room shall be provided. An approved, manually-operated valve with an integral switch shall be installed on the sprinkler supply line for each elevator machine room. The switch shall be connected to the elevator power disconnect device. The valve shall be easily accessible and located outside of and next to the machine room door not higher than 6 feet above the floor. The valve shall be normally closed. Opening the valve shall shut off power to the elevators and charge the sprinkler lines with water. The power disconnect control device shall remove power from the elevator before water begins to flow in the sprinkler system.

3.2 The sprinkler valve shall be permanently labeled in letters at least 1 inch in size in high contrast with the background, "ELEVATOR POWER DISCONNECT AND SPRINKLER ACTIVATION". The label shall specify which elevators are controlled by the switch.

3.3 When the elevator machine room, control room or the associated sprinkler control valve and associated piping may be exposed to freezing conditions, the sprinkler control valve shall be installed in an approved location that is readily visible and accessible, not higher than 6 feet above the floor, and on the path of travel to the machine room or control room door.

3.4 Elevator power disconnect devices shall comply with items 3.4.1 through 3.4.4.

3.4.1 A shunt trip-type circuit breaker or other approved control device that will remove power to the elevator controller, shall be installed in each elevator machine room and control room. In machine rooms and control rooms containing controllers for more than one elevator, the disconnect device shall disconnect power to all elevators controlled from that room, either by a master disconnect or by a disconnect for each elevator.

Note: Ground-fault circuit breakers have not been tested and approved for this purpose and are not acceptable.

3.4.2 Electrical power for the shunt trip control shall be a dedicated circuit(s) installed in compliance with the Seattle Electrical Code, article 620.51(E). When the elevator(s) is powered from a standby power source, the electrical power for the shunt trip control shall be powered from the same source.

3.4.3 Operation of elevator power disconnect circuits shall not interrupt power to the elevator emergency lighting, machine room, control room, or machinery space lighting, fire alarm system, or communications.

3.4.4 An illuminated visual device must be installed in the machine room adjacent to each elevator's disconnect to indicate that power is available to the shunt trip activation mechanism. In addition, control circuits to shut down elevator power shall be monitored for the presence of operating voltage. Loss of voltage to the control circuit for the disconnecting means shall cause a supervisory signal to be indicated at the fire alarm system control unit in accordance with NFPA 72.

NOTE: Manually opening the elevator disconnects shall not interrupt or cause a loss of voltage to the shunt trip control circuits.

3.5. The sprinkler system shall comply with Sections 3.5.1 through 3.5.8.

3.5.1. An accessible valve or other approved drain system shall be provided outside of the machine room or control room to drain the sprinkler system when the control valve has been returned to the closed position. The drain shall be located at the lowest point between the valve and the sprinkler head. A separate drain system shall be required for sprinklers located at the top of the hoistway and in elevator pits.

3.5.2. All sprinkler risers and returns shall be located outside of the machine room, control room and hoistway.

3.5.3. Sprinklers are not required at the top of noncombustible or fire-resistance-rated hoistways of elevators whose car enclosure materials meet the requirements of ASME A17.1, Safety Code for Elevators and Escalators.

3.5.4. Branch lines in machine rooms or control rooms shall supply sprinklers in these spaces only.

3.5.5 Sidewall spray sprinklers shall be installed at the bottom of each elevator hoistway that contains combustible hydraulic fluids. The sprinkler shall be located not more than 2 feet (0.61 m) above the floor of the pit.

3.5.6 Automatic sprinklers shall not be located on the car entrance side of pits or interfere with pit access.

3.5.7 A drain valve and plug shall be provided at the lowest point of the automatic sprinkler piping in the pit and shall be installed to avoid mechanical damage.

3.5.8 Sprinkler piping shall:

- enter the shaft at the floor level of the bottom landing,
- be wall mounted,
- fit tight against the wall, and

- have proper clearance to the car and counterweights.

In walk-in pits, sprinkler piping may enter the pit in an approved manner other than the floor level of the car's lowest landing.

4. REQUIREMENTS FOR UNSPRINKLERED MACHINE ROOMS AND CONTROL ROOMS. Sprinklered buildings with unsprinklered machine rooms or control rooms are required to comply with Section 4.

Automatic fire sprinklers are not required in elevator machine rooms, control rooms, or hoistways of traction elevators where all of the following conditions are met:

4.1 The machine room, control room, or hoistway is dedicated to elevator equipment only.

4.2 The machine room, control room, or hoistway is protected by smoke detectors, or other automatic fire detection installed in accordance with NFPA 72.

4.3 The machine room, control room, or hoistway is separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than that specified by the Seattle Building Code.

4.4 No materials unrelated to elevator equipment are permitted to be stored in the machine room, control room, or hoistway.

4.5 The elevator machinery is not of the hydraulic type that uses combustible hydraulic fluids.