DPD SFD	Joint Ruling DPD Director's Rule X-2026 SFD Administrative Rule X.XX.26

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CITY OF SEATTLE Department of Planning and Development Seattle Fire Department	1 of 9	DPD DR SFD Adm Rule
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Sprinkler Systems and Fire Alarms for Elevator Machinery Rooms, Control Rooms, Hoistways and Pits	Seattle Building Code Seattle Fire Code
	Type of Rule: Technical requirements
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	Approved **Date** John H. Nelsen, Fire Marshal, SFD

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Building Code Elevators		

BACKGROUND AND PURPOSE

The purpose of this rule is to clarify the requirements for existing fire protection ~~automatic sprinkler~~ systems in elevator machine rooms, control rooms or machinery spaces, and the top of hoistways and in 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~~ It includes requirements for new construction, existing elevator installations, and the required removal of existing fire protection systems during major alterations of elevator systems.

~~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.~~ This rule also identifies the requirements of the Seattle Department of Construction and Inspections (SDCI) and Seattle Fire Department (SFD) related to sprinklers, fire alarms, and testing and controls for these spaces.

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

In addition, the American Society of Mechanical Engineers (ASME) A17.1 elevator rules adopted in Chapter 30 of the Seattle Building Code, prohibits automatic fire sprinklers in elevator machine rooms unless they are provided with automatic power disconnect device known as a shunt trip. However, this type of automatic power disconnect device may cause serious problems for firefighting operations.

Note: Seattle's Elevator Code and this rule differ from Washington State's safety regulations and fees for all elevators, dumbwaiters, escalators and other conveyances. WAC 296-96-02481: City of Seattle requirements for sprinklers and shunt trips. Within the city limits of Seattle application of water will be manually controlled and elevator shut down will be installed per the current code adopted by the city of Seattle elevator section. See also RCW 70.87.

RULE

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

The rule clarifies the requirements for the installation of new elevators and existing elevators undergoing major alterations, i.e., major modernization.

Note: A major alteration is defined as replacement of the elevator controller, etc.

Part 1: Existing Building General Fire Alarm System Requirements

Buildings with an existing fire alarm system, the fire detection devices associated with the elevator system are required to be connected to and be part of the building fire alarm system. For buildings not provided with a building fire alarm system, the fire detection devices associated with the elevator system are required to be connected to and be part of a dedicated function fire alarm system for elevator monitoring.

Existing fire alarm systems that cannot accommodate additional fire detection devices required by ASME A17.1 and NFPA 72 for elevator recall, a dedicated function fire alarm system is acceptable. The dedicated function fire alarm system will be monitored by the building fire alarm system as required by NFPA 72.

Existing buildings with elevators undergoing major alteration. Existing buildings with elevators undergoing major alteration (i.e., modernization) are not required to upgrade an existing fire alarm system to support the functions of the upgraded elevator system when a dedicated-function fire alarm system would support fire detection devices as required by ASME A17.1 and NFPA 72 for elevator recall.

Part 2: Specific Fire Alarm System Requirements:

DR Section Index

Installations, alterations or retrofits (including modernization) of elevator systems or related components and systems in existing buildings shall comply with all applicable codes and with Sections 1-9 as described in DR Section Index below (Sections with actual requirements follow the index):

Note: Appendix A is provided as a historical reference for the installation requirements of shunt trips.

SECTION 1: Existing Buildings with Fire Sprinkler Systems.

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

1.1. Smoke detectors~~, (not heat detectors),~~ (heat detectors are allowed when ambient conditions prohibit smoke detection), 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.~~ of the following locations in accordance with NFPA 72:

1.1.1 Elevator lobby or floor level served by the elevator

1.1.2 Each elevator machine or control room

1.1.3 Machinery space containing a machine/brake

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.~~ Upon device activation, the detectors identified in section 1.1.1 through 1.1.3 shall signal to the fire alarm system to initiate Phase I recall or other hoistway protection.

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.~~ Where the elevator machine/brake is located at the top of the hoistway, or where an existing machine/brake is in the elevator pit area, a 135-degree fixed temperature heat detector(s) shall be located within 24 inches of the machine/brake and fire sprinkler.

1.4. 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 location where an initiating device is located.

1.5. 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 per NFPA 72, Section 21.3.2. The alarm indicator 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.~~

SECTION 2: Existing Elevators with Combustible Suspension means.

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. Fire sprinklers at the top of elevator hoistways shall be of an intermediate temperature classification.

Exception: The sprinklers in the elevator hoistway are not required if the suspension means provide 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 or have been tested for conformance of the listed requirements by an Accredited Elevator/Escalator Certification Organization (AECO).

2.2 Installation of a fire sprinkler at the pit requires the installation of a heat detector specifically to initiate recall. The heat detector shall be located within 24 inches of each fire sprinkler in the pit. The fire sprinkler shall be located no more than 24 inches above the bottom of the pit, and heat detector shall be installed within 24 inches of the fire sprinkler. This heat detector shall be of a lower temperature and have a faster Response Time Index (RTI) than the associated fire sprinkler.

2.3 Installation of a fire sprinkler at the top of hoistway requires the installation of a heat detector specifically to initiate recall. A heat detector shall be installed within 24 inches of the machine/brake and fire sprinkler. Each sprinkler head located at the top of the hoistway and shall initiate recall. This heat detector shall be of a lower temperature and have a faster Response Time Index (RTI) than the associated sprinkler.

2.4 New combustible suspension means or those without FT-1 rating or AECO Certification are prohibited from installation within the City of Seattle after the effective date of this Director's Rule.

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

SECTION 3: Existing Buildings with Sprinklered Machine/Control Rooms and/or Pits

~~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.~~ Fire sprinkler branch lines in machine rooms or control rooms shall supply fire sprinklers in these spaces only. An approved, manually operated valve with an integral switch shall be installed on the fire sprinkler supply line for each elevator machine. The integral switch shall be connected to the elevator power disconnect device. The valve assembly shall be located on the outside of the room, no higher than 6 feet above the finished floor. The valve assembly shall be normally closed. Opening the valve shall shut off power to the elevators and charge the fire sprinkler piping with water. The power disconnect control device shall remove power from the elevator prior to the application of water.

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~~. Adjacent to the valve

assembly, provide a sign stating, "ELEVATOR POWER DISCONNECT AND SPRINKLER ACTIVATION". The sign shall specify which elevator(s) are controlled by the switch. The sign shall be durable and permanent in nature, weather and corrosion resistant if applicable, have high-contrast color and background (i.e. red/white, black/white), and lettering of not less than 0.5 inch high.

3.3 When the elevator machine ~~room,~~ /control room or the associated fire sprinkler control valve and associated piping may be exposed to freezing conditions, the fire 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. Where an access door is provided, the door shall be provided with signage as required in Item 3.2. The access door shall be locked, and the key shall be retained in the lobby elevator key box.

3.4 Elevator power disconnect devices shall comply with items 3.4.1 through 3.4.~~4.~~3

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.~~ an Emergency System, Legally Required Standby System, or Optional Standby System, 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.~~ An illuminated visual device shall be installed in the machine room adjacent to each elevator's disconnect to indicate that power is available to the shunt trip activation mechanism. The illuminated devices shall not be located greater than 6 feet above finished floor. 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.

~~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 <u>(see 3.5.6)</u>.

3.5.2. All <u>fire</u> sprinkler risers and returns shall be located outside of the machine ~~room,~~ /control room and hoistway.

3.5.3. ~~Fire 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.~~ Fire sprinkler branch lines in machine rooms or /control rooms shall supply sprinklers in these spaces only.

3.5.4. Where provided, sidewall spray fire sprinklers shall be installed at the bottom of each elevator hoistway that contains combustible hydraulic fluids. The fire sprinkler shall be located not more than 24 inches (0.61 m) above the floor of the pit.

3.5.5. ~~Fire sprinkler branch lines in machine rooms or /control rooms shall supply sprinklers in these spaces only~~. Automatic sprinklers shall not be located on the car entrance side of pits or interfere with pit access.

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

3.5.7 Fire sprinkler piping shall:

3.5.7.1 enter <u>the</u> ~~shaft~~ <u>hoistway</u> at the floor level of the bottom landing,

3.5.7.2 be wall mounted.

3.5.7.3 ~~fit tight against the wall, and~~ have proper clearance to the car, counterweights, <u>pit equipment, and maintain required refuge space for elevator personnel.</u>

3.5.7.4 In walk-in pits, fire 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 or heat detectors, or other automatic fire detection installed in accordance with SBC 903.3.1.1.1 and 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.~~

SECTION 5: Removal of Sprinklers from Elevator Hoistway, Machine/Control Rooms and Pits.

5.1 Where sprinklers are being removed from an elevator hoistway, machine or control room or elevator pit, compliance with Sections 5.1.1-5.1.4 is required:

5.1.1 Submit a Seattle Fire Department (SFD) Request to Decommission Fire Protection System Form

5.1.2 Obtain decommissioning approval from SFD & SDCI

5.1.3 Removal of sprinklers from hydraulic elevators shall comply with Section 6

5.1.4 Removal of sprinklers from electric elevators shall comply with Section 7

Note: Existing elevators without Phase I Emergency Recall Operation by Fire Alarm Initiating Devices and/or Phase II Emergency In-Car Operation are exempt from removal requirements and the existing sprinklers and fire alarm initiating devices shall remain in place.

SECTION 6: Hydraulic Elevators Undergoing Major Alteration (i.e., modernization)

6.1 Where hydraulic elevators undergo a major alteration, including modernization, all of the following existing items shall be removed:

6.1.1 Sprinklers and all branch piping from machine/control room and pit.

6.1.2 Fire alarm initiating devices from pit.

6.1.3 Shunt trip power disconnect control device, solenoid valve/key switch, light and associated pipe and wiring.

6.1.4 Signage associated with shunt trip device.

6.2 Penetrations associated with removal of piping to maintain fire rating shall be protected as required by the Seattle Building Code.

SECTION 7: Electric Elevators Undergoing Major Alteration (i.e., modernization).

7.1 Where electric elevators undergo a major alteration, including modernization, all of the following existing devices, controls and piping shall be removed:

7.1.1 Sprinklers and all branch piping from top of hoistway, machine/control room and pit.

7.1.2 Fire alarm initiating devices from top of hoistway, machine room, and pit

7.1.3 Shunt trip disconnect, solenoid valve/key switch and associated pipe and wiring.

7.1.4 Shunt trip power disconnect control device, solenoid valve/key switch, light and associated pipe and wiring.

7.1.5 Signage associated with shunt trip device.

7.2 Penetrations associated with removal of piping to maintain fire rating shall be protected as required by the Seattle Building Code.

SECTION 8: Annual Testing of Shunt Trip Devices.

8.1 Annual testing of shunt trip devices shall be performed in accordance with SBC Section 3028.6.

8.1.2 Testing of the shunt trip devices on elevator installations approved after 11/15/2024 shall be in accordance with Section 3028.6 of the edition of the Seattle Building Code in effect at the time of installation.

8.1.3 Testing of the shut trip device on installations approved prior to 11/15/2024 shall be consistent with the requirements of Seattle Building Code or Director's Rule in effect at the time of the installation. (See Appendix A for a list of the applicable requirements by code edition and Director's Rule).