CHAPTER 49
Fixed Guideway Transit and Passenger Rail Systems

User note:

About this chapter: This chapter is unique to Washington State.

SECTION 4900

Fixed Guideway Transit and Passenger Rail Systems

[S]4901.1 Scope NFPA 130. General. Fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130-2020, as modified below.

[S] 4901.1.1 NFPA 130 Section 1.3.4. Modify NFPA 130 Section 1.3.4 as follows:

1.3.4 This standard ((~~shall also apply~~)) applies as a basis for fixed guideway transit and passenger rail systems ((~~where~~)) if nonelectric and combination electric-other (such as diesel) vehicles are used. ((~~Where~~)) If such vehicles are not passenger carrying vehicles or are buses or ((~~trolley coaches~~)) street cars, the standard ((~~shall~~)) does not apply to those vehicles but ((~~shall~~)) does apply to the fixed guideway transit and passenger rail systems in which such vehicles are used.

[S] 4901.1.2 NFPA 130 Section 3.2.2. Modify NFPA 130 Section 3.2.2 as follows:

3.2.2* Authority Having Jurisdiction (AHJ). ((~~An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.~~)) The fire chief or other designated authority charged with the administration of the fire code, or a duly authorized representative.

4901.2 NFPA 130 Section 3.3.44.2. Add new definition as follows:

3.3.44.2 Traction power substation (TPSS): A TPSS is an electrical substation consisting of switchgear transformers/rectifiers, emergency trip equipment, and other systems that converts AC electric power provided by the electrical power industry for public utility service to DC voltage to supply light rail vehicles with traction current.

[S] 4901.2.1 NFPA 130 Section 4.4.1.1. Add new definition as follows:
4.4.1.1 Emergency power assumptions. The emergency power requirements in this standard assume a fire or other emergency event within the station or trainway concurrent with a power outage of the primary source of electrical power unrelated to the event within the transit system.

[S]4901.2.1.1 NFPA 130 Section 4.4.2. Modify NFPA 130 Section 4.4.2 as follows:
4.4.2* Fire Scenarios. Design scenarios shall consider the location and size of a fire or a fire-related emergency and shall be approved.

[S]4901.2.2 NFPA 130 Section 5.1.2.3. Add a new Section NFPA 130 Section 5.1.2.3 as follows:
5.1.2.3 Fixed guideway transit and passenger rail stations shall comply with the applicable provisions of Section 1114 of the 2021 *Seattle Building Code.*

[S] 4901.2.3 NFPA 130 Section 5.1.3.1.1. Add a new Section NFPA 130 Section 5.1.3.1.1 as follows:
5.1.3.1.1 Fixed guideway transit and passenger rail stations are classified as Group A, Division 3 occupancies in accordance with the 2021 *Seattle Building Code* and 2021 *Seattle Fire Code.*

[S]4901.2.4 NFPA 130 Section 5.2.1.1. Modify NFPA 130 Section 5.2.1.1 as follows:
5.2.1.1 During the course of construction, provisions of NFPA 241 and Chapter 33 of the 2021 *Seattle Fire Code* and Chapter 33 of the 2021 *Seattle Building Code* ((~~shall~~)) apply. ((~~except as modified herein.~~))

[S]4901.((~~6~~))2.5 NFPA 130 Section 5.2.2.2 Modify NFPA 130 Section 5.2.2.2 as follows:

5.2.2.2 Construction types shall conform to the requirements in ((~~NFPA 220~~)) the International Building Code, Chapter 6, unless otherwise exempted in this section.

Table 5.2.2.1
Minimum Construction Requirements for New Station Structures

Station Configuration	Construction Type†
Stations erected entirely above grade and in a separate building:	
Open stations	Type IIB
Enclosed stations	Type IIA
Stations erected entirely or partially below grade:	
Open above grade portions of below grade structures*	Type IIA
Below grade portions of structures	Type IB
Below grade structures with occupant loads exceeding 1000	Type IA

* Roofs not supporting an occupancy above are not required to have a fire resistance rating.

† Construction types are in accordance with the International Building Code.

[S] 4901.2.6 NFPA Section 5.2.4.1. Modify NFPA 130 Section 5.2.4.1 as follows:
5.2.4.1 Interconnected Floor Levels. Interconnection between floor levels in stations shall be permitted as follows:
(1) *Stairs and escalators regularly used by passengers for circulation during normal revenue service in enclosed stations equipped throughout with an automatic sprinkler system ((~~shall not be~~)) are not required to be fire-separated if the station is constructed in accordance with Chapter 7 of the 2021 *Seattle Building Code.* All required exit stairs shall be enclosed in accordance with Chapter 10 of the 2021 *Seattle Building Code.*
(2) Public areas on different levels in open stations are permitted to be interconnected.
(3) Public areas on different levels in enclosed stations shall be permitted to be interconnected, provided fire separation is not required for smoke control or other fire protection purposes.

Purple=2021 SFC proposed changes, Green 2021 WA State Amendment, Red Current 2018 Seattle amendments

[S] 4901.2.6.1. NFPA Section 5.2.4.2. Modify NFPA 130 Section 5.2.4.2 as follows:

5.2.4.2* Separation Between Public and Nonpublic Floor Areas. All public areas shall be fire-separated from adjacent nonpublic areas by 5.2.4.3 through 5.2.4.5.

[S]4901.((~~7~~))2.6.2. NFPA 130 Section 5.2.2 Modify NFPA 130 Section 5.2.4.3 as follows:

5.2.4.3 Ancillary spaces. Fire resistance ratings of separations between ancillary occupancies shall be established as required for accessory occupancies and incidental uses by ((~~NFPA 101~~)) the International Building Code and in accordance with ASTM E119 and ANSI/UL 263.

[S]4901.((~~8~~))2.6.3 NFPA 130 Section 5.2.5.4. Modify NFPA 130 Section 5.2.5.4 as follows:

5.2.5.4 Materials used as interior finish in open stations shall comply with the requirements of ((~~NFPA 101, Chapter 12~~)) the International Building Code, Chapter 8.

[S]4901.2.6.4 NFPA 130 Section 5.2.7.2. Modify NFPA 130 Section 5.2.7.2 as follows:

5.2.7.2* Permanent rubbish containers in the station shall comply with Section 304.3 of the 2021 *Seattle Fire Code.* ((~~be manufactured of noncombustible materials.~~))

[S]4901.((~~9~~))2.6.5. NFPA 130 Section 5.3.1.1. Modify NFPA 130 Section 5.3.1.1 as follows:

5.3.1.1 The provisions for means of egress for a station shall comply with ((~~Chapter 7 and 12 of NFPA 101~~)) the International Building Code, Chapter 10, except as herein modified.

[S]4901.2.6.6. NFPA 130 Section 5.3.2.1. Modify NFPA 130 Section 5.3.2.1 as follows:

5.3.2.1* The occupant load for a station shall be based on whichever is greater, the train load of trains simultaneously entering the station on all tracks in normal traffic direction plus the simultaneous entraining load awaiting trains or the number of occupants computed at the rate of one occupant per 7 sq. ft. for stations serving event venues.
(1) The train load shall consider only one train at any one track, inside a station.
(2) The basis for calculating train and entraining loads shall be the peak period ridership figures as projected for design of a new system or as updated for an operating system.

[S]4901.((~~10~~))2.6.7 NFPA 130 Section 5.3.2.2.1. Add a New Section to NFPA 130 Section 5.3.2.2.1 as follows:
5.3.2.2.1 Where station occupancy is anticipated to be greater than design capacity during a major event the operating agency shall initiate approved measures to restrict access to the station, when required by the fire code official, to ensure existing means of egress are adequate as an alternate to account for peak ridership associated with major events.

[S]4901.((~~11~~))2.6.8 NFPA 130 Section 5.3.2.4. Modify NFPA 130 Section 5.3.2.4 as follows:
5.3.2.4 ((~~Where~~)) If an area within a station is intended for use by other than passengers or employees, the following parameters shall apply:
1 The occupant load for that area shall be determined in accordance with the provisions of ((~~NFPA 101~~)) the International Building Code as appropriate for the use.
2. The additional occupant load shall be included in determining the required egress from that area.
3. The additional occupant load shall be permitted to be omitted from the station occupant load where the area has independent means of egress of sufficient number and capacity.

[S]4901.2.6.9 NFPA 130 Section 5.3.3.1. Modify NFPA 130 Section 5.3.3.1 as follows:

5.3.3.1* Platform Evacuation Time. There shall be sufficient egress capacity to evacuate the platform occupant load as defined in 5.3.2.5 from the station platform in 4 minutes or less, but in no case shall the required egress width (excluding escalators) be less than prescribed by Section 1005 of the 2021 *Seattle Building Code*.

[S]4901.((~~12~~))2.6.10 NFPA 130 Section 5.3.3.4. Modify NFPA 130 Section 5.3.3.4 as follows:

5.3.3.4 Travel distance. For open stations the maximum travel distance on the platform to a point at which a means of egress route leaves the platform shall not exceed 100 m (325 ft.). For enclosed stations the travel distance to an exit shall not exceed 76 m (250 ft.).

[S]4901.2.6.11 NFPA 130 Section 5.3.3.6. Modify NFPA 130 Section 5.3.3.6 as follows:

5.3.3.6 Alternate Egress. At least two means of egress remote from each other shall be provided from each station platform as follows:

((~~(1)* A means of egress used as a public circulation route shall be permitted to provide more than 50 percent of the required egress capacity from a station platform or other location.~~

~~(2)~~)) (1) Means of egress from separate platforms shall be permitted to converge.

((~~(3)~~)) (2) Where means of egress routes from separate platforms converge, the subsequent capacity of the egress route shall be sufficient to maintain the required evacuation time from the incident platform.

[S]4901.2.6.12 NFPA 130 Section 5.3.3.8. Add a new Section to NFPA 130 Section 5.3.3.8 as follows:

5.3.3.8 Every required stairway in enclosed stations serving floor levels more than 30 feet (9144 mm) below its level of exit discharge, except those regularly used by passengers shall comply with the requirements for a pressurized stairway in Section 909.20.5 of the 2021 *Seattle Building Code*.

[S]4901.((~~13~~))2.6.13 NFPA 130 Section 5.3.5.4. Modify NFPA 130 Section 5.3.5.4 as follows:

((~~**5.3.5.4** Escalators shall not account for more than one-half of the egress capacity at any one level.~~((~~except as permitted by 5.3.5.5.~~))~~))

[S]4901.((~~14~~))2.6.14 NFPA 130 Section 5.3.5.5. Delete NFPA 130 Section 5.3.5.5.

((~~**5.3.5.5** Escalators shall be permitted to account for more than one-half of the required egress capacity at any one level where the following criteria are met:~~

~~(1) The escalators are capable of being remotely brought to a~~

~~stop in accordance with the requirements of 5.3.5.7(3)(b), 5.3.5.7(4), and 5.3.5.7(5).~~

~~(2) A portion of the egress capacity from each station level is stairs.~~

~~(3) For enclosed stations, at least one enclosed exit provides continuous access from the platforms to the public way.~~))

[S]4901.2.6.15 NFPA 130 Section 5.3.5.6 through 5.3.5.10. Delete NFPA 130 Section 5.3.5.6 through 5.3.5.10:

((~~**5.3.5.6*** In calculating the egress capacity of escalators, the following criteria shall be met:~~

~~1. One escalator at each level shall be considered as being out of service.~~

~~2. The escalator chosen shall be the one having the most adverse effect upon egress capacity.~~

~~**5.3.5.7** Where escalators are permitted as a means of egress in stations, the following criteria shall be met:~~

~~1.* The escalators shall be constructed of noncombustible materials.~~

~~2.* Escalators running in the direction of egress shall be permitted to remain operating.~~

~~3. Escalators running reverse to the direction of egress shall be capable of being stopped locally and remotely as follows:~~

~~a. Locally by a manual stopping device at the escalator.~~

~~b. Remotely by one of the following:~~

~~i. A manual stopping device at a remote location.~~

~~ii. As part of a preplanned evacuation response.~~

~~4.* Where provision is made for remote stopping of escalators counted as means of egress, one of the following shall apply:~~

~~a. The stop shall be delayed until it is preceded by a minimum 15-second audible signal or warning message sounded at the escalator.~~

~~b. Where escalators are equipped with the necessary controls to decelerate in a controlled manner under the full-rated load, the stop shall be delayed for at least 5 seconds before beginning deceleration, and the deceleration rate shall be no greater than 0.052 m/sec2 (0.17 ft/sec2).~~

~~5. Where an audible signal or warning message is used, the following shall apply:~~

~~a. The signal or message shall have a sound intensity that is at least 15 dBA above the average ambient sound level for the entire length of the escalator.~~

~~b. The signal shall be distinct from the fire alarm signal.~~

~~c. The warning message shall meet audibility and intelligibility requirements~~.

~~**5.3.5.8** Escalators with or without intermediate landings shall be acceptable as a means of egress, regardless of vertical rise.~~

~~**5.3.5.9** Escalators exposed to the outdoor environment shall be provided with slip-resistant landing and floor plates, and if they are exposed to freezing temperatures, the landing and floor plates and the steps shall be heated to prevent the accumulation of ice and snow.~~

~~**5.3.5.10** Stopped escalators shall be permitted to be started in the direction of egress in accordance with the requirements for stopping of escalators described in 5.3.5.7(3), 5.3.5.7(4), and 5.3.5.7(5), provided that the escalators can be restarted in a fully loaded condition and that passengers are given warning.~~))

[S]4901.2.6.16 NFPA 130 Section 5.3.6 through 5.3.6.4. Delete NFPA 130 Section 5.3.6 through 5.3.6.4:

((~~**5.3.6 Elevators.**~~
~~**5.3.6.1** Elevators meeting the requirements of 5.3.6.2 through 5.3.6.4 shall be permitted to account for part of the means of egress capacity in stations.~~
~~**5.3.6.2 Capacity.** Where elevators are counted as contributing to the means of egress capacity, the following shall apply:~~
~~(1) They shall account for no more than 50 percent of the required egress capacity.~~
~~(2) *At least one elevator shall be considered out of service, and one elevator shall be reserved for fire service.~~
~~(3) *The capacity of each elevator shall be the carrying capacity of the elevator within 30 minutes.~~
~~**5.3.6.3 Holding Area.** Elevators counted as contributing to the means of egress capacity from any level of a station shall be accessed via holding areas or lobbies at that level, which shall be designed as follows:~~
~~(1) The holding areas or lobbies shall be separated from the platform by a smoketight fire separation having a fire resistance rating of at least 1 hour but not less than the time required to evacuate the holding area occupant load.~~
~~(2) At least one stair shall be accessible from the holding area.~~
~~(3) The holding area shall be sized to accommodate one person per 0.46 m_2 (5 ft_2).~~
~~(4) If the holding area includes portions of the platform, the area within 460 mm (18 in.) of the trainway shall not be considered~~
~~in the calculation.~~
~~(5) Upon activation of smoke control in the platform or adjacent trainway areas, the holding area shall be pressurized to a minimum of 25 Pa (0.1003 in. of water gauge).~~
~~(6) The holding area shall be provided with emergency voice alarm devices with two-way communication to the system operations control center.~~
~~**5.3.6.4 Design Features.** Elevators counted as contributing to the means of egress capacity shall be designed as follows:~~
~~(1) Shaft enclosures shall be constructed as fire separations having a 2-hour fire resistance rating.~~
~~(2) *The design shall limit water flow into the shaft.~~
~~(3) No more than two elevators used for means of egress or fire department access shall share the same machine room.~~

~~(4) Machine rooms shall be separated from each other by fire separations having a minimum fire resistance rating of 2 hours.~~
~~(5) The elevators shall be connected to emergency power.~~
~~(6) *During emergency evacuation, the elevators shall travel only between the incident level and a point of safety.~~
~~(7) *Provisions for Phase I emergency recall operation shall be based on analysis of fire scenarios on each level served and demonstrate safe egress for those scenarios.~~))

[S]4901.((~~15~~))2.6.17 NFPA 130 Section 5.3.7. Modify NFPA 130 Section 5.3.7.1 through 5.3.7.2.1 as follows:

5.3.7* Doors, gates, security grilles, and exit hatches.

5.3.7.1 The egress capacity for doors and gates in a means of egress serving public areas shall be computed as follows:

1. ((~~60~~)) Sixty people per minute (p/min) for single leaf doors and gates.

2.* 0.0819 p/mm-min (2.08 p/in.-min) for bi-parting multileaf doors and gates measured for the clear width dimension.

5.3.7.2 Gates in a means of egress shall be designed in accordance with the requirements for doors serving as a means of egress in accordance with Chapter 10 of the 2021 *Seattle Building Code* and maintain the clear width of the exit walkway.

5.3.7.2.1 Security grilles are allowed when designed and operated in accordance with the IBC.

[S]4901.2.6.18 NFPA 130 Section 5.3.8.5. Modify NFPA 130 Section 5.3.8.5 as follows:

5.3.8.5 Turnstile-type fare barriers shall be permitted in accordance with ((~~NFPA *101*~~)) Chapter 10 of the 2021 *Seattle Building Code* and shall in the means of egress shall meet the following criteria:
(1) Dimensions shall be in accordance with the requirements of ((~~NFPA *101*~~)) Chapter 10 of the 2021 *Seattle Building Code*.
(2) Turnstiles that drop away from the egress opening under the conditions listed in 5.3.8.2 or 5.3.8.3 shall be credited with a capacity of 50 p/min for egress calculations.
(3) Turnstiles that revolve freely in the direction of egress under the conditions listed in 5.3.8.2 shall meet the following criteria:
(a) Each unit shall be credited with a capacity of 25 p/min for egress calculations.
(b) The turnstiles shall not account for more than 50 percent of the required egress capacity for each egress route.

[S] 4901.((~~16~~))2.6.19 NFPA 160 Section 5.3.9. Modify NFPA 130 Section 5.3.9 as follows:

5.3.9* Horizontal exits. Horizontal exits ((~~compliant with NFPA 101~~)) shall ((~~be permitted for up to 100 percent of the number of exits and required egress capacity provided that not more than 50 percent of the number and required capacity is into a single building~~)) comply with International Building Code Section 1026.

[S]4901.((~~17~~))2.6.20 NFPA 130 Section 5.3.11. Modify NFPA 130 Section 5.3.11.1 and 5.3.11.2 as follows:

5.3.11 Means of egress lighting.

5.3.11.1 Illumination of the means of egress in stations, including escalators that are considered a means of egress, shall be in accordance with ((~~Section 7.8 of NFPA 101~~)) International Building Code Section 1008.

5.3.11.2 Means of egress, including escalators considered as means of egress, shall be provided with a system of emergency lighting in accordance with ((~~Section 7.9 of NFPA *101*~~)) the International Building Code Section 1008.

[S]4901.3 NFPA 130 Section 5.4.1.1. Modify NFPA 130 Section 5.4.1.1 as follows:

5.4.1.1 Enclosed stations shall be provided with a fire command center in accordance with NFPA 72 and Section 508 of the 2021 *Seattle Fire Code*.

[S]4901.4 NFPA 130 Section 5.4.2.5. Modify NFPA 130 Section 5.4.2.5 as follows:

5.4.2.5 When activated, fire alarm, smoke detection, valve switches, and waterflow signals shall be transmitted simultaneously to the local station and to the operations control center. (See also Chapter 10). An Operations Control Center per 9.6 shall be used to supervise these systems and devices.

[S]4901.((~~3~~)).5 NFPA 130 Section 5.4.4. Modify NFPA 130 Sections 5.4.4.1 and new Section 5.4.4.1.1 to read as follows:
5.4.4.1* An automatic sprinkler ((~~protection~~)) system shall be provided ((~~in~~)) throughout enclosed stations ((~~areas of stations used for concessions, in storage areas, in trash rooms, and other similar areas with combustible loadings, except trainways~~.))

EXCEPTIONS: 1. Traction power substation (TPSS) when located in a transformer vault designed in accordance with the NFPA 70.

2. Other high voltage equipment located in a transformer vault designed in accordance with the NFPA 70 when approved by the fire code official.

3. Fire command centers, unoccupied communication room(s), and unoccupied signal rooms when protected with clean agent fire suppression and separated from other spaces with two-hour fire rated construction.

4. Other ((~~operational critical~~)) rooms, critical to station operation, when protected with alternative automatic fire-extinguishing systems ((~~clean agent fire suppression~~)) and separated from other spaces with two-hour fire rated construction, when approved by the fire code official.

5.4.4.1.1 An automatic sprinkler system shall be provided in areas of open stations used for concessions, markets, storage areas and similar areas with combustible loadings, and in trash rooms, electrical rooms, mechanical rooms, machinery rooms, communication rooms, and other enclosed rooms.

EXCEPTIONS:
1. Stations at grade with less than 1,500 sq. ft. of ancillary area/ancillary space.
2. Fire command centers, unoccupied communication room(s), and unoccupied signal rooms when protected with alternative automatic fire-extinguishing sytems ((~~clean agent fire suppression~~)) and separated from other spaces with two-hour fire rated construction.
3. Other ((~~operational critical~~)) rooms, critical to station operation, when protected with clean agent fire suppression and separated from other spaces with two-hour fire rated construction, when approved by the fire code official.

[S]4901.5.1 NFPA 130 Section 5.4.4.2. Modify NFPA 130 Section 5.4.4.2 as follows:

5.4.4.2 Sprinkler protection shall be permitted to be omitted in areas of open stations ((~~remotely located from public spaces~~)) separated from the station by a distance of 20 feet, where allowed by the *fire code official*.

[S]4901.5.2 NFPA 130 Section 5.4.4.5. Modify NFPA 130 Section 5.4.4.5 as follows:

5.4.4.5 Other fire suppression systems, if approved, shall be permitted to be substituted for automatic sprinkler systems in the areas listed in 5.4.4.1 and 5.4.4.1.1.

[S]4901.((4))5.3 NFPA 130 Section 5.4.5. Modify NFPA 130 Section 5.4.5.1 as follows:
5.4.5.1 Class I standpipes shall be installed in enclosed stations in accordance with ((~~NFPA 14~~)) *International Fire Code* Section 905 except as modified herein and any other area as required by the *fire code official*.

[S]4901.5.4 NFPA 130 Section 5.4.5.3.1. Add a new Section to NFPA 130 Section 5.4.5.3.1 as follows:
5.4.5.3.1 Hydraulic design information signs shall be provided at each fire department connection indicating the residual inlet pumping pressure(s) required for the hydraulically most remote and/or other selected hose connection outlet location(s).

[S]4901.5.5 NFPA 130 Section 5.4.5.4. Modify NFPA 130 Section 5.4.5.4 as follows:

5.4.5.4 Standpipes shall be permitted to be of the dry type with the approval of the authority having jurisdiction provided the following requirements are met:

1. Systems shall be installed in a manner so that the water is delivered to all hose connections on the system in 10 minutes or less.
2. Combination air relief-vacuum valves shall be installed at each high point in the system.

   Exception: Combination air relief-vacuum valves are not required at FDC's located at a high point of the system.

[S]4901.5.6 NFPA 130 Sections 5.4.5.8 through 5.4.5.10. Add new Sections 5.4.5.8 through 5.4.5.10 to NFPA 130 as follows:

5.4.5.8 The standpipe system shall be designed to provide 1000 gpm at 130 psi. The 1000 consists of the two most remote hose connections flowing 500 gpm each.

5.4.5.9 Isolation valves on the standpipe are permitted to be locked in the open position in lieu of being electronically monitored.

5.4.5.10 Pressure regulating devices are not required per Section 7.2.3.2 of NFPA 14.

[S]4901.((5))5.7 NFPA 130 Section 5.4.6. Modify NFPA 130 Sections 5.4.6 and 5.4.6.1 as follows:

5.4.6 Portable Fire Extinguishers. Portable fire extinguishers in such number, size, type, and location ((~~as determined by the authority having jurisdiction~~)) shall be provided in accordance with the International Fire Code Section 906.

5.4.6.1 Where required, portable fire extinguishers shall be selected, installed, inspected, tested, and maintained in accordance with NFPA 10. Portable fire extinguishers are not required in public areas of at-grade stations.

[S]4901.((6))5.8 NFPA 130 Section 5.4.7. Modify NFPA 130 Section 5.4.7 and add a new section 5.4.7.1.1 as follows:

5.4.7 Emergency ventilation shall be provided in enclosed stations in accordance with Chapter 7 and the International Building Code Section 909.

5.4.7.1.1 Smoke control system. A smoke control system shall be provided in underground fixed guideway transit and passenger rail stations in accordance with Section 909 of the 2021 *Seattle Building Code.* Smoke control shall restrict movement of smoke to the general area of fire origin and non-occupied exhaust areas and maintain tenability in the means of egress.

[S]4901.6 NFPA 130 Section 5.4.8. Modify NFPA 130 Section 5.4.8 through 5.4.8.5 as follows:

5.4.8 Emergency Power Supply System (EPSS)

5.4.8.1((~~Emergency power~~)) A Class 2, Type 60, Level 1 Emergency Power Supply System (EPSS) in accordance with Article 700 of *NFPA 70* and Chapter 4 of NFPA 110 shall be provided for underground and enclosed stations.

5.4.8.2 The supply system for emergency purposes, in addition to the normal services to the station building, shall be one or more of the types of systems described in 700.12(A) through 700.12(E) of NFPA 70.

5.4.8.3 The emergency power system shall have a capacity and rating sufficient to supply all equipment required to be connected by 5.4.8.5.

5.4.8.4 Selective load pickup and load shedding shall be permitted in accordance with NFPA 70.

5.4.8.5 The following systems shall be connected to the emergency power system ((~~shall include the following~~)):

((~~(1) Emergency lighting~~
~~(2) Protective signaling systems~~
~~(3) Emergency communication system~~
~~(4) Fire command center~~
~~(5) Elevators providing required egress capacity [see 5.3.6.4(5)]~~))

(1) Exit signs and means of egress illumination.
(2) Elevator car lighting.
(3) Emergency voice/alarm communication systems.
(4) Automatic fire detection systems.
(5) Fire alarm systems.
(6) Electrically powered fire pumps.
(7) Power and lighting for mechanical equipment rooms and the fire command center.

(8) Lighting for elevator cars, mechanical rooms, machine spaces and control rooms.
(9) Ventilation and cooling equipment for elevator machine rooms, machine spaces and control rooms.
(10) Ventilation and automatic fire detection equipment for pressurized stairways and elevator hoistways.
(11) Smoke control systems.
(12) A selected elevator in each bank of elevators in accordance with 2021 Seattle Building Code Section 3016.7. A bank of elevators is a group of elevators or a single elevator controlled by a common operating system and all elevators that respond to a single call button constitute a bank of elevators. All elevators shall be transferable to emergency power.
(13) For fire service access and occupant evacuation elevators:
(13.1) Operation of all fire service access elevator cars.
(13.2) Operation of all occupant evacuation elevators until they are recalled.
(13.3) Elevator controller cooling equipment.
(13.4) For fire service access elevators only, elevator hoistway lighting.
(13.5) Sump pumps in elevator pits, where provided.
(14) Emergency responder radio coverage.

[S]4901.7 NFPA 130 Section 6.3.1.4. Modify NFPA 130 Section 6.3.1.4 as follows:
6.3.1.4* Within enclosed trainways, the maximum distance between exits shall not exceed ((~~762~~)) 244 m (((~~2500~~)) 800 ft).

[S]4901.7.1 NFPA 130 Section 6.3.2.1. Modify NFPA 130 Section 6.3.2.1 as follows:
6.3.2.1* The means of egress within the trainway shall be provided with an unobstructed clear width graduating from ((~~610 mm (24 in.)~~)) 760 mm (30 in.) at the walking surface to ((~~760 mm (30 in.)~~)) 910 mm (36 in.) at 1575 mm (62 in.) above the walking surface to ((~~430 mm(17 in.)~~)) 760 mm (30 in.) at 2025 mm (80 in.) above the walking surface.

[S]4901.7.2 NFPA 130 Section 6.3.2.3. Delete NFPA 130 Section 6.3.2.3.
((~~**6.3.2.3*** The width of exit stairs shall not be required to exceed 1120 mm (44 in.) for enclosed trainways.~~))

[S]4901.7.3 NFPA 130 Section 6.3.3.10. Modify NFPA 130 Section 6.3.3.10 as follows:
6.3.3.10 Exit stairs and doors shall comply with Chapter ((~~7 of NFPA 101~~,))10 of the 2021 *Seattle Building Code,* except as herein modified.

[S]4901.7.4 NFPA 130 Section 6.3.3.15 through 6.3.3.17. Delete NFPA 130 Sections 6.3.3.15 through 6.3.3.17.
((~~**6.3.3.15** Exit hatches shall be permitted in the means of egress, provided the following conditions are met:
(1) Hatches shall be equipped with a manual opening device that can be readily opened from the egress side.
(2) Hatches shall be operable with not more than one releasing operation.
(3) The force required to open the hatch when applied at the opening device shall not exceed 130 N (30 lb).
(4) The hatch shall be equipped with a hold-open device that automatically latches the door in the open position to prevent accidental closure.
6.3.3.16 Exit hatches shall be capable of being opened from the discharge side to permit access by authorized personnel.
6.3.3.17* Exit hatches shall be conspicuously marked on the discharge side to prevent possible blockage.~~))

[S]4901.7.5 NFPA 130 Section 6.3.5.2. Modify NFPA 130 Section 6.3.5.2 as follows:
6.3.5.2 System egress ((~~points~~)) walk surfaces shall be illuminated at a level of not less than 2.69 lx (0.25 ft.-candles) or as approved by the authority having jurisdiction.

[S]4901.7.6 NFPA 130 Section 6.3.5.12. Modify NFPA 130 Section 6.3.5.12 as follows:
6.3.5.12 Lighting systems for enclosed trainways shall be installed in accordance with ((~~Sections 7.8 and 7.9 of NFPA 101~~)) Chapter 10 of the 2021 *Seattle Building Code,* except as otherwise noted in 6.3.5.

[S]4901.8 NFPA 130 Section 6.4.5.1. Modify NFPA 130 Section 6.4.5.1 as follows:
6.4.5.1 An approved fire standpipe system shall be provided ((~~in enclosed~~)) for trainways where physical factors prevent or impede access to the water supply or fire apparatus, ((~~where~~)) if required by the *authority having jurisdiction.*

[S]4901.8.1 NFPA 130 Section 6.4.5.4. Modify NFPA 130 Section 6.4.5.4 as follows:

6.4.5.4 Standpipes shall be permitted to be of the dry type with the approval of the authority having jurisdiction provided the following requirements are met:

1. Systems shall be installed in a manner so that the water is delivered to all hose connections on the system in 10 minutes or less.
2. Combination air relief-vacuum valves shall be installed at each high point in the system.
   Exception: Air relief-vacuum valves are not required at FDC's located at a high point of the system.

[S]4901.8.2 NFPA 130 Section 6.4.5.9.1. Add new NFPA 130 Section 6.4.5.9.1 as follows:

6.4.5.9.1 Hydraulic design information signs shall be provided at each fire department connection indicating the residual inlet pumping pressure(s) required for the hydraulically most remote and/or other selected hose connection outlet location(s).

[S]4901.8.3 NFPA 130 Section 6.4.5.11. Add new NFPA 130 Sections 6.4.5.11 and Section 6.4.5.11.1 as follows.

6.4.5.11 Four-way 2-1/2-inch fire department connections shall be provided at all emergency access points.

6.4.5.11.1 The trainway standpipe system shall be provided with hose connections every 200 ft. on each egress walkway.

[S]4901.8.4 NFPA 130 Section 6.4.5.12 through 6.4.5.13.1. Add new NFPA 130 Sections 6.4.5.12 through 6.4.5.13.1 as follows:

6.4.5.12 Standpipes shall be sized to provide 1000 gpm. Hydraulic calculations shall be based on 500 gpm at 130 psi at the hydraulically most remote hose connection, with a simultaneous flow of 500 gpm at the next hydraulically most remote hose connection. The maximum calculated pressure at any point in the system shall not exceed 350 psi.

6.4.5.13 Standpipes shall be interconnected at all tunnel cross passageways and within the stations, with isolation valves provided for each interconnection.

6.4.5.13.1 Isolation valves on the standpipe are permitted to be locked in the open position in lieu of being electronically monitored.

[S]4901.8.5 NFPA 130 Section 6.4.8. through 6.4.8.2 Modify NFPA 130 Section 6.4.8 through 6.4.8.2 as follows.

6.4.8 Emergency Power Supply System (EPSS).

6.4.8.1 Enclosed trainways shall be ((~~such that, in the event of failure of the normal supply to or within the system, emergency power shall be~~)) provided with a Class 2, Type 60, Level 1 Emergency Power Supply System (EPSS) in accordance with Article 700 of *NFPA 70* and Chapter 4 of NFPA 110. The supply system for emergency purposes, in addition to the normal services to the trainway, shall be one or more of the types of systems described in 700.12(A) through 700.12(E) of *NFPA 70*.

6.4.8.2 The following systems shall be connected to the emergency power supply system:

((~~(1) Emergency lighting~~
~~(2) Protective signaling systems~~
~~(3) Emergency communication system~~
~~(4) Fire command center~~))

(1) Exit signs and means of egress illumination.
(2) Elevator car lighting.
(3) Emergency voice/alarm communication systems.
(4) Automatic fire detection systems.
(5) Fire alarm systems.
(6) Power and lighting for the fire command center.
(7) Lighting for mechanical rooms containing critical equipment.
(8) Electrically powered fire pumps.
(9) Ventilation and automatic fire detection equipment for pressurized stairways.

(10) Smoke control systems.
(11) A selected elevator in each bank of elevators in accordance with 2021 Seattle Building Code Section 3016.7. A bank of elevators is group of elevators or a single elevator controlled by a common operating system and all elevators that respond to a single call button constitute a bank of elevators. All elevators shall be transferable to emergency power.

[S]4901.9 NFPA 130 Section 7.8.1. Modify NFPA 130 Section 7.8.1 as follows:
7.8.1((~~The design of the power for the emergency ventilation system shall comply with the requirements of Article 700 of NFPA 70.~~)) The emergency ventilation system shall be provided with a Class 2, Type 60, Level 1 Emergency Power Supply System (EPSS) in accordance with Article 700 of NFPA 70, and Chapter 4 of NFPA 110.

[S]4901.9.1 NFPA 130 Section 7.8.1.1. Delete NFPA 130 Section 7.8.1.1.
((~~**7.8.1.1** Alternatively, the design of the power for the emergency ventilation system shall be permitted to be based upon the results of the electrical reliability engineering analysis according to 7.2.3(6), as approved.~~))

[S]4901.10 NFPA 130 Section 10.3.1 and 10.3.2. Modify NFPA 130 Section 10.3.1 and 10.3.2 as follows:
10.3.1 If required by the AHJ, underground and ((~~Enclosed~~)) enclosed stations and trainways shall be provided with a public radio enhancement system.
10.3.2 Radio coverage shall be provided throughout enclosed stations as a percentage of floor area as specified in NFPA ((~~1221~~)) 1225.

[S]4901.10.1 NFPA 130 Section 10.4.1.1. Add new NFPA 130 Sections 10.4.1.1 as follows:
10.4.1.1 If required by the authority having jurisdiction, stations shall be provided with an approved Emergency Communication System in accordance with the 2022 edition of NFPA 1225.

[S]4901.11 NFPA 130 Section 12.4.1. Modify NFPA 130 Section 12.4.1 as follows:
12.4.1 Conduits, raceways, ducts, boxes, cabinets, and equipment enclosures shall be constructed of noncombustible materials. In stations, guideways and tunnels, other approved materials when encased in concrete shall be acceptable.