2022 Aboveground #2 Fuel Oil Storage EPSS Reminder List

Applicable Codes and Standards

CBC 2022, CEC 2022, CMC 2022, CFC 2022
NFPA 30 2021, NFPA 37 2018, NFPA 55 2019, NFPA 99 2021, NFPA 110 2019, NFPA 704 2017

I. Scope

1.	Emergency and standby power systems required by the California Building Code or the California Fire Code shall be installed in accordance with the California Building Code NFPA 70 and NFPA 110.	**CBC, Sec. 2702.1.3**
2.	Prevention, control and mitigation of dangerous conditions related to storage, use, dispensing, mixing and handling of flammable and combustible liquids shall be in accordance with California Fire Code Chapter 50, Chapter 57 and Sec.605.	**CFC, Sec. 5701.1**
3.	Flammable and combustible liquids shall not be placed, stored or handled in any occupancy within the scope of California Code of Regulations, Title 19, Division 1 regulations, except as provided in the California Fire Code.	**CCR, Title 19, Div. 1, Sec. 3.15**

II. Generator Fuel Supply

CHK	N/A			
☐	☐	**1.**	Minimum fuel supply of 24 hrs. full-demand operation for acute care hospital. (Min 72 hrs. for NPC-5)	**CEC, 700-12(D)(2), Exc.1**
☐	☐	**2.**	Minimum fuel supply of 6 hrs. full-demand operation for SNF, Psych, ICF.	**CEC, 700-12(D)(2), Exc.2**
☐	☐	**3.**	Minimum fuel supply of 4 hrs. full-demand opertion for ambulatory surgery clinics.	**CEC, 700-12(D)(2), Exc.3**
☐	☐	**4.**	For facilities subject to Medicare & Medicade Services (CMS) regulations, see CFR 42 482.15(e)(3) and CFR 483.73(e) for emergency fuel requirements.	**CEC, 700-12(D)**
☐	☐	**5.**	See OSHPD CAN 2-108 for temporary generator fuel supplies.	**CBC, Sec. 108**
☐	☐	**6.**	Liquid fuel shall feed to engines by pumps only.	**NFPA 37, Sec. 6.9**
☐	☐	**7.**	Fuel supply for exclusive use of EPSS or separate draw down provided.	**NFPA 110, Sec. 5.5.1 & Sec. 5.5.1.1**
☐	☐	**8.**	Main fuel tank(s) shall be sized to accommodate 133% of the specific EPS class.	**NFPA 110, Sec. 5.5.3**
☐	☐	**9.**	Low-fuel sensing switch required for the main fuel supply tank(s) when less than the minimum fuel required for the specific EPS class remains in the tank(s).	**NFPA 110, Sec. 5.5.2**
☐	☐	**10.**	Calculate full-demand generator fuel consumption.	**NFPA 110, Sec. 7.9.1**
☐	☐	**11.**	Tanks shall be sized so that the fuel is consumed within the storage life, or provisions shall be made to remediate fuel that is stale or contaminated or to replace stale or contaminated fuel with clean fuel.	**NFPA 110, Sec. 7.9.1.3**
☐	☐	**12.**	Prior to being placed into service, tanks shall be tested in accordance with Section 21.5 of NFPA 30.	**CFC, Sec. 5704.2.12.1**
☐	☐	**13.**	Low fuel annunciation at generator panel.	**NFPA 110, Sec. 5.6.5.1**
☐	☐	**14.**	Low fuel annunciation at a remote location on-site or off-site.	**NFPA 110, Sec. 5.6.6.2(1)**
☐	☐	**15.**	Low fuel annunciation at a constantly monitored location.	**NFPA 99, Secs. 6.7.1.2.7.1, 6.7.1.2.7.2(A)-(I)**
☐	☐	**16.**	Low fuel annunciation at regular work station of operating personnel.	**NFPA 99, Secs. 6.7.1.2.7.1, 6.7.1.2.7.2(A)-(I)**

III. Aboveground Tanks Located Outside of Buildings

CHK	N/A			
☐	☐	**1.**	Location approved by local authorities when applicable.	**CAC, Sec. 7-125 (b)**
☐	☐	**2.**	Location of tanks with a capacity >660 gals. distance to property lines, public ways and important buildings shall be in accordance NFPA 30, Table 22.4.1.1(a).	**CFC, Sec. 5704.2.9.6.1.1**
☐	☐	**3.**	Tank, tank vent and tank filler locations in accordance with NFPA 55, Table 9.3.2.	**NFPA 55, Sec. 9.3.2**
☐	☐	**4.**	Signage in accordance with NFPA 704 >100 gal. capacity.	**CFC, Sec. 5704.2.3.2**
☐	☐	**5.**	Fabrication & construction of tanks complies with NFPA 30, Chapters 21, 22 & 23.	**CFC, Sec. 5704.2.7**
☐	☐	**6.**	Horizontal cylindrical and rectangular tanks shall not exceed a gauge pressure of 1 psi and shall be limited to 2.5 psi under emergency venting conditions.	**NFPA 30, Sec. 21.4.2.1.5**
☐	☐	**7.**	The design of the supporting stucture for tanks shall be in accordance with the California Building Code and NFPA 30.	**CFC, Sec. 5704.2.7.7**
☐	☐	**8.**	Where a tank is located in an area where it is subject to buoyancy because of a rise in the water table, flooding or accumulation of water from fire suppression operations, uplift protection shall be provided in accordance with Sections 22.14 and 23.14 of NFPA 30.	**CFC, Sec. 5704.2.7.8**
☐	☐	**9.**	Supports for above-ground tanks storing Class I, II or IIIA liquids elevated more than 12 inches above grade shall have a fire-resistance rating of not less than 2 hours in accordance with the fire exposure criteria specified in ASTM E 1529 or protected in accordance with UL2085 for protected tanks or protected by an approved water spray system designed in accordance with Chapter 9 and NFPA 15 or stationary tanks inside building with sprinklers per 903.3.1.1.	**CFC, Sec. 5704.2.9.2.3**
☐	☐	**10.**	Guard posts or other means shall be provided to protect exterior storage tanks from vehicular damage in accordance with CFC Sec. 312..	**CFC, Sec. 5704.4.5**
☐	☐	**11.**	Spill control required when any individual vessel exceeds 60 gal. or the aggregate capacity exceeds 1,000 gals.	**CFC, Secs. 5703.4, 5004.2.1 & 605.4.2.7**
☐	☐	**12.**	Secondary containment required when quantity exceeds maximum allowable quantity per control area in accordance with provisions of CFC Table 5003.1.1(3).	**CFC, Secs. 5004.2 & 5703.4**
☐	☐	**13.**	Listed generator subbase secondary containment fuel tanks of (660 gal) capacity and below shall be permitted to be installed outdoors or indoors without diking or remote impounding.	**NFPA 110, Sec. 7.9.12**
☐	☐	**14.**	Drainage control or diking required for aboveground tanks located outside.	**CFC, Sec. 5704.2.10**
☐	☐	**15.**	Drainage control or diking not required for listed secondary containment aboveground tanks located outside.	**CFC, Sec. 5704.2.10, Exc. 2**
☐	☐	**16.**	Fuel tanks supplied by pumps shall have (1) overflow line piped to source tank, (2) high level alarm and (3) high-level automatic shutoff.	**NFPA 37, Sec. 6.5.4**
☐	☐	**17.**	Filling, emptying and vapor recovery connections shall be located outside no less than 5' from building openings or lot lines of property that can be built on.	**CFC, Sec. 5704.2.7.5.2**
☐	☐	**20.**	The minimum horizontal separation between an LP-gas container >125 gals.and a Class I, II or IIIA liquid storage tank >660 gals. shall be 20 feet.	**NFPA 30, Secs. 22.4.2.6 & 22.4.2.4.**

IV. Tanks Located Inside Buildings in Compliance with CFC 605.4

CHK	N/A			
☐	☐	**1.**	Signs prohibiting open flames and smoking.	**CFC, Sec. 308.1.1 & 310.3**
☐	☐	**2.**	Signage in accordance with NFPA 704 >100 gal. capacity.	**CFC, Sec. 5003.5**
☐	☐	**3.**	In unsprinklered buildings, tanks shall comply with UL 80, UL 142 or UL 2085. The aggregate capacity of all tanks shall not exceed 660 gals.	**CFC, Sec. 605.4.2.2, Item 1**
☐	☐	**4.**	In sprinklered buildings, the aggregate capacity of tanks that comply with UL 142 shall not exceed 1320 gals.	**CFC, Sec. 605.4.2.2, Item 2**
☐	☐	**5.**	In sprinklered rooms, the aggregate capacity of protected tanks that comply with UL 2085 and CFC Sec. 5704.2.9.7 shall not exceed 3000 gals.	**CFC, Sec. 605.4.2.2, Item 3**

IV. Tanks Located Inside Buildings in Compliance with CFC 605.4 Cont'd.

CHK	N/A			
☐	☐	6.	≤ 3000 gals. of combustible liquids stored in accordance with Sec. 605.4.2.2 #3 in compliant tanks shall not be counted towards the maximum allowable quantity. Such tanks are not required to be located in a control area.	**CFC, Sec. 605.4.2.4 & Table 5003.1.1(1), Note i**
☐	☐	7.	In accordance with CFC Sec. 5003.4.1, fuel storage >3000 gals. shall be located in a Group H-3 occupancy. See Table 5003.1.1(1).	**CFC, Sec. 605.4.2 & 5003.4.1**
☐	☐	8.	Liquid storage room (H-3) >1000 sq. ft. must have at least 25% of perimeter on an exterior wall.	**CBC, Sec. 415.6.2**
☐	☐	9.	Group H-3 occupancy separated from adjacent occupancies in accordance with CBC Table 508.4. See CBC Sec. 442 for a room containing a generator.	**CBC, Sec. 508.4.4**
☐	☐	10.	Fuel tanks inside structures shall be securely mounted on noncombustible supports.	**NFPA 37, Sec. 6.3.2.1**
☐	☐	11.	All fuel tanks and systems shall be installed and maintained in accordance with NFPA 30 & NFPA 37.	**NFPA 110, Sec. 7.9.1.1**
☐	☐	12.	Tanks inside buildings required to have means to prevent overflow into the building.	**NFPA 30, Sec. 24.14.8**
☐	☐	13.	Room containing a tank requires a minimum 1-hour separation. See CBC Table 508.4 and CBC Sec.442 for a room containing a generator.	**CFC, Sec. 605.4.2.6**
☐	☐	14.	Tanks in basements located not more than two stories below grade plane.	**CFC, Sec. 605.4.2.8**
☐	☐	15.	Spill control required when any individual vessel exceeds 60 gal. or the aggregate capacity exceeds 1,000 gals and secondary containment is not provided.	**CFC, Sec. 605.4.2.7**
☐	☐	16.	Horizontal cylindrical and rectangular tanks shall not exceed a gauge pressure of 1 psi and shall be limited to 2.5 psi under emergency venting conditions.	**NFPA 30, Sec. 21.4.2.1.5**
☐	☐	17.	Listed generator subbase secondary containment fuel tanks of (660 gal) capacity and below shall be permitted to be installed outdoors or indoors without diking or remote impounding.	**NFPA 110, Sec. 7.9.12**
☐	☐	18.	Monitoring of secondary containment of tanks located indoors required.	**CFC, Sec. 5004.2.2.5,**
☐	☐	19.	Shall not be located near or be allowed to obstruct an egress route.	**NFPA 30, Sec. 24.5.1**
☐	☐	20.	Spill control and secondary containment when tank located inside structure or on roof of structure.	**NFPA 37, Sec. 6.3.2.4 & Sec. 6.3.4.2**
☐	☐	21.	Fuel tanks supplied by pumps shall have (1) overflow line piped to source tank, (2) high level alarm and (3) high-level automatic shutoff.	**NFPA 37, Sec. 6.5.4**
☐	☐	22.	Filling, emptying and vapor recovery connections shall be located outside no less than 5' from building openings.	**NFPA 30, Sec. 22.13.4.1**

V. Tanks Located Inside Buildings in Compliance with CFC Ch. 57

CHK	N/A			
☐	☐	1.	Signs prohibiting open flames and smoking.	**CFC, Sec. 5704.2.3.1**
☐	☐	2.	Signage in accordance with NFPA 704 >100 gal. capacity.	**CFC, Sec. 5704.2.3.2**
☐	☐	3.	Liquid storage room/warehouse required when maximum allowable quantity exceeded.	**CFC, Sec. 5704.3.4.3**
☐	☐	4.	Group H-3 occupancy >1000 sq. ft. must have at least 25% of perimeter on an exterior wall.	**CBC, Sec. 415.6**
☐	☐	5.	Group H-3 occupancy separated from adjacent occupancies in accordance with CBC Table 508.4. See CBC Sec. 442 for a room containing a generator.	**CBC, Sec. 508.4.4**
☐	☐	6.	The design of the supporting structure for tanks shall be in accordance with the Califonia Building Code and NFPA 30.	**CFC, Sec. 5704.2.7.7**
☐	☐	7.	Tanks inside buildings required to have a means to prevent overflow into the	**CFC, Sec. 5704.2.9.5.1**
☐	☐	8.	Fabrication & construction of tanks complies with NFPA 30.	**CFC, Sec. 5704.2.7**
☐	☐	9.	Horizontal cylindrical and rectangular tanks shall not exceed a gauge pressure of 1 psi and shall be limited to 2.5 psi under emergency venting conditions.	**NFPA 30, Sec. 21.4.2.1.5**
☐	☐	10.	Spill control required when any individual vessel exceeds 55 gal. or the aggregate capacity exceeds 1,000 gals.	**CFC, Secs. 5703.4 & 5004.2.1**
☐	☐	11.	Secondary containment required when quantity exceeds maximum allowable quantity per control area in accordance with provisions of CFC Table 5003.1.1(1).	**CFC, Sec. 5703.4**

V. Tanks Located Inside Buildings in Compliance with CFC Ch. 57 Cont'd

CHK	N/A			
☐	☐	**12.**	Listed generator subbase secondary containment fuel tanks of (660 gal) capacity and below shall be permitted to be installed outdoors or indoors without diking or remote impounding.	**NFPA 110, Sec. 7.9.12**
☐	☐	**13.**	Monitoring of secondary containment of tanks located indoors required.	**CFC, Sec. 5004.2.2.5**
☐	☐	**14.**	Shall not be located near or be allowed to obstruct an egress route.	**CFC, Sec. 5704.3.3.3**
☐	☐	**15.**	Sprinkler protection required when maximum allowable quantity is exceeded (120	**CFC, Sec. 5704.3.7.5.1**
☐	☐	**16.**	Protected by fire sprinklers if Group H-3.	**CFC, Sec. 5705.3.7.3**
☐	☐	**17.**	Spill control and secondary containment when tank located inside structure or on roof of structure.	**NFPA 37, Sec. 6.3.2.4 & Sec. 6.3.4.2**
☐	☐	**18.**	Fuel tanks supplied by pumps shall have (1) overflow line piped to source tank, (2) high level alarm and (3) high-level automatic shutoff.	**NFPA 37, Sec. 6.5.4**
☐	☐	**19.**	Filling, emptying and vapor recovery connections shall be located outside no less than 5' from building openings or lot lines of property that can be built on.	**CFC, Sec. 5704.2.7.5.2**

VI. Additional Requirements for Protected Aboveground Tanks

CHK	N/A			
☐	☐	**1.**	Emergency vents on protected tanks are permitted to discharge in a building.	**CFC, Sec. 5704.2.7.4, Exc. 2**
☐	☐	**2.**	Structural supports tested as part of a protected tank in accordance with UL2085 require no additional fire-resistance rating.	**CFC, Sec. 5704.2.9.2.3, Exc. 1**
☐	☐	**3.**	Protected tanks location distances to property lines, public ways and important buildings in accordance with NFPA 30, Table 22.4.1.1(b) are permitted to be reduced by 1/2 but not less than 5 ft.	**CFC, Sec. 5704.2.9.6.1.1, Exc. 3**
☐	☐	**4.**	Normal vents on protected tanks require flame arrestors or pressure vacuum	**CFC, Sec. 5704.2.7.3.2**
☐	☐	**5.**	Protected tanks require secondary containment, drainage control or diking in accordance with CFC, Sec. 5004.2	**CFC, Sec. 5704.2.9.7.3**
☐	☐	**6.**	A means shall be provided to establish the integrity of secondary containment in accordance with NFPA 30.	**CFC, Sec. 5704.2.9.7.3, NFPA 30 Sec. 22.11.4.9**
☐	☐	**7.**	Vehicle impact protection is required, either incorporated into the system or by guard posts, or both in accordance with CFC Sec. 312..	**CFC, Sec. 5704.2.9.7.4**
☐	☐	**8.**	Protected aboveground tanks shall be provided with overfill prevention.	**CFC, Sec. 5704.2.9.7.5**
☐	☐	**9.**	Tank openings in protected tanks shall be on the top only.	**CFC, Sec. 5704.2.9.7.8**
☐	☐	**10.**	Antisiphon devices required on all piping extending below the top level of the tank.	**CFC, Sec. 5704.2.9.7.9**

VII. Generator Fuel Supply/Return Piping

CHK	N/A			
☐	☐	**1.**	Provisions shall be made for pressure testing of piping.	**CFC, Sec. 5703.6.3**
☐	☐	**2.**	Protected from corrosion and galvanic action.	**CFC, Sec. 5703.6.5**
☐	☐	**3.**	Piping protected from damage by guard posts or other approved means in accordance with CFC Sec. 312..	**CFC, Sec. 5703.6.4**
☐	☐	**4.**	Supports protected by 2-hr fire rating, draining away or other approved means.	**CFC, Sec. 5703.6.8**
☐	☐	**5.**	Approved metallic or nonmetallic flex connectors permitted to protect the piping.	**NFPA 37, Sec. 6.8.2.1**
☐	☐	**6.**	Valves shall be provided to control normal flow and shut off flow for breaks.	**NFPA 37, Sec. 6.8.3**
☐	☐	**7.**	Fuel piping shall be of compatible metal to minimize electrolysis and be properly sized.	**NFPA 110, Sec. 7.9.3**
☐	☐	**8.**	Galvanized fuel lines shall not be used.	**NFPA 110, Sec. 7.9.3.1**
☐	☐	**9.**	Approved flexible fuel lines shall be used between the prime mover and the fuel piping.	**NFPA 110, Sec. 7.9.3.2**
☐	☐	**10.**	Fuel line solenoids shall be battery powered.	**NFPA 110, Sec. 7.9.9 & Sec. 5.6.3.2**

VII. Generator Fuel Supply/Return Piping Continued

CHK	N/A		
☐	☐	**11.** EPS piping shall be designed to minimize damage from earthquakes.	**NFPA 110, Sec. 7.11.5**
☐	☐	**12.** Gravity return fuel lines between the day tank and main supply tank shall flow freely to the main tank.	**NFPA 110, Sec. 7.9.4.2**
☐	☐	**13.** Liquid fuel shall feed to engines by pumps.	**NFPA 37, Sec. 6.9**
☐	☐	**14.** Spill control, drainage control & secondary containment not required for exposed piping connected to systems. See ANSI/ASME B31.3	**CFC, Sec. 5703.6.2**

VIII. Aboveground Tank Venting

CHK	N/A		
☐	☐	**1.** Vents for normal venting shall vent to exterior not less than 12 ft. above ground level and not less than 5' from openings or lot lines of property that can be built on.	**CFC, Sec. 5704.2.7.3.3**
☐	☐	**2.** The vent pipe shall terminate outside the building at a point at least 24" from any building opening at the same or lower level.	**NFPA 37 Sec. 6.7.1.1**
☐	☐	**3.** Piping for venting shall discharge vertically or horizontally and shall not be trapped by eaves or other obstructions. away from adjacent walls.	**CFC, Sec. 5704.2.7.3.3**
☐	☐	**4.** Piping for normal venting shall drain back to tank.	**CFC, Sec. 5704.2.7.3.4**
☐	☐	**5.** Vent piping shall not be manifolded unless otherwise required.	**CFC, Sec. 5704.2.7.3.5**
☐	☐	**6.** Normal vent piping not used for any other purpose.	**CFC, Sec. 5704.2.7.3.1**
☐	☐	**7.** Vent piping protected from damage by guard posts or other approved means in accordance with CFC Sec. 312.	**CFC, Sec. 5703.6.4**
☐	☐	**8.** Aboveground tanks require additional emergency venting.	**CFC, Sec. 5704.2.7.4**
☐	☐	**9.** Emergency vents shall not discharge inside buildings.	**CFC, Sec. 5704.2.7.4**

IX. Temporary Installations at Construction Sites

CHK	N/A		
☐	☐	**1.** During construction, temporary aboveground storage tanks shall be in accordance with the provisions of CFC Sec. 5706.2.1 through 5706.2.8.1.	**CFC, Sec. 5706.2**

NOTE

Compliance with all items on this list does not necessarily assure compliance with all provisions of the applicable codes and standards. This reminder list should be used only by persons with a comprehensive knowledge of the applicable codes and standards.

OSHPD Policy Intent Notices and Code Application Notices.
https://hcai.ca.gov/construction-finance/codes-and-regulations/#PINs
https://hcai.ca.gov/construction-finance/codes-and-regulations/#CANs
OSHPD Project Review Status
https://hcai.ca.gov/construction-finance/resources/project-status-reports/
OSHPD Public Use Forms
https://hcai.ca.gov/construction-finance/resources/forms-applications-reminder-lists/#ProjectForms