CA

66264.192 Design and Installation of New Tank Systems or Components

(a)

Tanks shall have sufficient shell strength and, for closed tanks, pressure controls (e.g., vents) to assure that they do not collapse or rupture. The Department will review the design of the tanks, including the foundation, structural support, seams and pressure controls and seismic considerations. The Department shall require that a minimum shell thickness be maintained at all times to ensure sufficient shell strength. Factors to be considered in establishing minimum thickness include the width, height and materials of construction of the tank, and the specific gravity of the waste which will be placed in the tank. In reviewing the design of the tank and approving a minimum thickness, the Department shall rely upon appropriate industrial design standards and other available information.

(b)

Owners or operators of new tank systems or components shall obtain and submit to the Department, at time of submittal of Part B information, a written assessment, reviewed and certified by an independent, qualified professional engineer, registered in California, in accordance with section 66270.11(d), attesting that the tank system has sufficient structural integrity and is acceptable for the transferring, storing and treating of hazardous waste and that the tanks and containment system are suitably designed to achieve the requirements in this

article. The assessment shall show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be transferred, stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Department to review and approve or disapprove the acceptability of the tank system design, shall also include, at a minimum, the following information:(1) design standard(s) according to which tank(s) and/or the ancillary equipment are constructed; (2) hazardous characteristics of the waste(s) to be handled; (3) for new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:(A) factors affecting the potential for corrosion, including but not limited to: 1. soil moisture content; 2. soil pH; 3. soil sulfides level; 4. soil resistivity; 5. structure to soil potential; 6. influence of nearby underground metal structures (e.g., piping); 7. existence of stray electric current; 8. existing corrosion-protection measures (e.g., coating, cathodic protection), and (B) the type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:1. corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.; 2. corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and 3. electrical isolation devices such as insulating joints, flanges, etc.; (4) for underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; (5) design considerations to

ensure that:(A) tank foundations will maintain the load of a full tank; (B) tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of section 66264.18(a); and (C) tank systems will withstand the effects of frost heave; and (6) those design requirements and factors listed in subsection (a) of this section.

(1)

design standard(s) according to which tank(s) and/or the ancillary equipment are constructed;

(2)

hazardous characteristics of the waste(s) to be handled;

(3)

for new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:(A) factors affecting the potential for corrosion, including but not limited to: 1. soil moisture content; 2. soil pH; 3. soil sulfides level; 4. soil resistivity; 5. structure to soil potential; 6. influence of nearby underground metal structures (e.g., piping); 7. existence of stray electric current; 8. existing corrosion-protection measures (e.g., coating, cathodic protection), and (B) the type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:1. corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.; 2. corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and 3. electrical isolation devices such as insulating joints, flanges, etc.;

(A)

factors affecting the potential for corrosion, including but not limited to: 1. soil moisture content; 2. soil pH; 3. soil sulfides level; 4. soil resistivity; 5. structure to soil potential; 6. influence of nearby underground metal structures (e.g., piping); 7. existence of stray electric current; 8. existing corrosion-protection measures (e.g., coating, cathodic protection), and

1.

soil moisture content;

2.

soil pH;

3.

soil sulfides level;

4.

soil resistivity;

5.

structure to soil potential;

6.

influence of nearby underground metal structures (e.g., piping);

7.

existence of stray electric current;

8.

existing corrosion-protection measures (e.g., coating, cathodic protection), and

(B)

the type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:1. corrosion-resistant materials of construction such as special alloys,

fiberglass reinforced plastic, etc.; 2. corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and 3. electrical isolation devices such as insulating joints, flanges, etc.;

1.

corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;

2.

corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and

3.

electrical isolation devices such as insulating joints, flanges, etc.;

(4)

for underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage;

(5)

design considerations to ensure that:(A) tank foundations will maintain the load of a full tank; (B) tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of section 66264.18(a); and (C) tank systems will withstand the effects of frost heave; and

(A)

tank foundations will maintain the load of a full tank;

(B)

tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards

of section 66264.18(a); and

(C)

tank systems will withstand the effects of frost heave; and

(6)

those design requirements and factors listed in subsection (a) of this section.

(c)

The owner or operator of a new tank system shall ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, professional engineer, registered in California, either of whom is trained and experienced in the proper installation of tank systems or components, shall inspect the system for the presence of any of the following items: (1) weld breaks; (2) punctures; (3) scrapes of protective coatings; (4) cracks; (5) corrosion; (6) other structural damage or inadequate construction/installation. All discrepancies shall be remedied before the tank system is covered, enclosed, or placed in use.

(1)

weld breaks;

(2)

punctures;

(3)

scrapes of protective coatings;

(4)

cracks;

(5)

corrosion;

(6)

other structural damage or inadequate construction/installation. All discrepancies shall be remedied before the tank system is covered, enclosed, or placed in use.

(d)

New tank systems or components that are placed underground and that are back filled shall be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(e)

All new tanks and ancillary equipment shall be tested for tightness prior to being covered, enclosed, or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system shall be performed prior to the tank system being covered, enclosed, or placed into use.

(f)

Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

(g)

The owner or operator shall provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under subsection (b)(3) of this section, or other corrosion protection if the Department believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated shall be supervised by an independent corrosion expert to ensure proper installation.

(h)

The owner or operator shall obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of subsections (c) through (g) of this section, that attest that the tank system was properly designed and installed and that repairs, pursuant to subsections (c) and (e) of this section, were performed. These written statements shall also include the certification statement as required in section 66270.11(d) of this division.

(i)

(1) Notwithstanding subsections (b) through (h) of this section, design and installation of new tank systems or components used to manage hazardous waste, and which meet the criteria specified in subsection (i)(2) of this section, are not subject to the requirements of subsections (i) through (n) of this section until January 24, 1998. The assessment specified in subsection (l) of this section shall be obtained prior to placing a new tank system in service and shall be kept on file at the facility. This assessment shall be reviewed and certified by an independent, qualified, professional engineer, registered in California, in accordance with section 66270.11(d), attesting that the tank system has sufficient structural integrity and is acceptable for the transferring, storing and treating of hazardous waste. The assessment shall be valid for a maximum period of five (5) years or the remaining service life of the tank system, as stated in the engineer's assessment, whichever is less. (2) The provisions of subsection (i)(1) of this section apply only to: (A) onground or aboveground tank systems containing only non-RCRA hazardous waste generated onsite, and tank systems authorized under Permit-by-Rule pursuant to Chapter 45 of this division, Conditional Authorization pursuant to HSC 25200.3, and Conditional Exemption pursuant to

HSC 25201.5, and (B) onground or aboveground tank systems containing RCRA hazardous waste generated onsite, if: 1. the owner or operator is a very small quantity generator as defined in section 66260.10 of this division, or a small quantity generator as defined in section 66260.10 of this division, or 2. the owner or operator is not subject to regulation in 40 CFR part 264 pursuant to an exemption in 40 CFR section 264.1, but the owner or operator is subject to the standards of this article.

(1)

Notwithstanding subsections (b) through (h) of this section, design and installation of new tank systems or components used to manage hazardous waste, and which meet the criteria specified in subsection (i)(2) of this section, are not subject to the requirements of subsections (i) through (n) of this section until January 24, 1998. The assessment specified in subsection (l) of this section shall be obtained prior to placing a new tank system in service and shall be kept on file at the facility. This assessment shall be reviewed and certified by an independent, qualified, professional engineer, registered in California, in accordance with section 66270.11(d), attesting that the tank system has sufficient structural integrity and is acceptable for the transferring, storing and treating of hazardous waste. The assessment shall be valid for a maximum period of five (5) years or the remaining service life of the tank system, as stated in the engineer's assessment, whichever is less.

(2)

The provisions of subsection (i)(1) of this section apply only to: (A) onground or aboveground tank systems containing only non-RCRA hazardous waste generated onsite, and tank systems authorized under Permit-by-Rule pursuant to Chapter 45 of this division, Conditional Authorization pursuant to HSC 25200.3, and Conditional Exemption pursuant to HSC 25201.5, and (B) onground or aboveground tank systems

containing RCRA hazardous waste generated onsite, if: 1. the owner or operator is a very small quantity generator as defined in section 66260.10 of this division, or a small quantity generator as defined in section 66260.10 of this division, or 2. the owner or operator is not subject to regulation in 40 CFR part 264 pursuant to an exemption in 40 CFR section 264.1, but the owner or operator is subject to the standards of this article.

(A)

onground or aboveground tank systems containing only non-RCRA hazardous waste generated onsite, and tank systems authorized under Permit-by-Rule pursuant to Chapter 45 of this division, Conditional Authorization pursuant to HSC 25200.3, and Conditional Exemption pursuant to HSC 25201.5, and

(B)

onground or aboveground tank systems containing RCRA hazardous waste generated onsite, if: 1. the owner or operator is a very small quantity generator as defined in section 66260.10 of this division, or a small quantity generator as defined in section 66260.10 of this division, or 2. the owner or operator is not subject to regulation in 40 CFR part 264 pursuant to an exemption in 40 CFR section 264.1, but the owner or operator is subject to the standards of this article.

1.

the owner or operator is a very small quantity generator as defined in section 66260.10 of this division, or a small quantity generator as defined in section 66260.10 of this division, or

2.

the owner or operator is not subject to regulation in 40 CFR part 264 pursuant to an exemption in 40 CFR section 264.1, but the owner or operator is subject to the standards of this article.

(j)

A generator or owner or operator authorized pursuant to Permit-by-Rule pursuant

to Chapter 45 of this division, Conditional Authorization pursuant to HSC 25200.3, or Conditional Exemption pursuant to HSC 25201.5, operating a non-RCRA underground tank system or an underground tank system otherwise exempt from permitting requirements pursuant to the federal act, shall comply with the applicable standards of Title 23 of the California Code of Regulations relating to underground tank systems.

(k)

New, onground or aboveground non-RCRA tank systems or tank systems otherwise exempt from permitting requirements pursuant to the federal act, with secondary containment, whose design and installation have been approved by a local agency or agencies, may, at the discretion of the CUPA, be exempt from the engineering assessment specified in subsection (l) of this section, provided minimum criteria specified in subsections (k)(1) through (k)(3) of this section are met. If the CUPA determines to exempt a new tank system from the assessment required pursuant to this subsection, the exemption shall be for a period of not more than three (3) years from the date the exemption was granted. The tank system owner or operator shall submit documentation of local agency approval to the applicable CUPA for review and possible acceptance in lieu of the assessment specified in subsection (l) of this section. If there is no CUPA or the CUPA requests that the Department make a determination, the documentation shall be submitted to the Department. (1) tank system must have secondary containment capable of containing 100 percent of the contents of the tank and ancillary piping volume; and (2) if the tank system is exposed to precipitation, the secondary containment system must have sufficient capacity, in addition to that required in subsection (k)(1) of this section, to contain run-on and infiltration from a 25-year, 24-hour rainfall event; (3) tank system secondary containment shall be provided with a

leak detection system that is designed and operated so that it will detect either the failure of the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours.

(1)

tank system must have secondary containment capable of containing 100 percent of the contents of the tank and ancillary piping volume; and

(2)

if the tank system is exposed to precipitation, the secondary containment system must have sufficient capacity, in addition to that required in subsection (k)(1) of this section, to contain run-on and infiltration from a 25-year, 24-hour rainfall event;

(3)

tank system secondary containment shall be provided with a leak detection system that is designed and operated so that it will detect either the failure of the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours.

(l)

The tank system assessment shall include all of the following information: (1) tank configuration (i.e., horizontal, vertical), and gross capacity (in gallons); (2) design standard(s), if available, according to which the tank and ancillary equipment were constructed, and all of the following information;(A) material of construction; (B) material thickness and the method used to determine the thickness; (C) description of tank system piping (material, diameter); (D)

description of any internal and external pumps; and (E) sketch or drawing of tank including dimensions. (3) documented age of the tank system (if tank was previously used), if available, (otherwise, an estimate of the age); (4) description and evaluation of any leak detection equipment; (5) description and evaluation of any corrosion protection equipment, devices, or material; (6) description and evaluation of any spill prevention or overfill equipment; (7) description and evaluation of secondary containment for the tank system (secondary containment must meet minimum standards as specified in subsections (k)(1) through (k)(3) of this section) including applicable secondary containment for ancillary equipment as required in subsection 66265.193(f); (8) hazardous characteristics of the waste(s) that have been or will be handled; (9) prior to placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, professional engineer, registered in California, either of whom is trained and experienced in the proper installation of tank systems, shall inspect the system or component for the presence of any of the following items and document in writing the results of the inspection: (A) weld cracks or breaks; (B) scrapes of protective coatings; (C) corrosion; (D) any structural damage or inadequate construction or installation such as cracks, punctures, damaged fittings. All discrepancies shall be documented in the assessment and remedied before the tank system is placed in use. (10) all new tanks and ancillary equipment shall be tested for tightness prior to being placed in use. The results of the test(s) shall be documented in this assessment. Tank system integrity or leak test requirements must be in compliance with all local requirements. Prior to conducting a tank system integrity test or leak test, contact local agency staff for local requirements. (11) estimated remaining service life of the tank system based on findings of subsections (l)(1) through (l)(10).

(1)

tank configuration (i.e., horizontal, vertical), and gross capacity (in gallons);

(2)

design standard(s), if available, according to which the tank and ancillary equipment were constructed, and all of the following information;(A) material of construction; (B) material thickness and the method used to determine the thickness; (C) description of tank system piping (material, diameter); (D) description of any internal and external pumps; and (E) sketch or drawing of tank including dimensions.

(A)

material of construction;

(B)

material thickness and the method used to determine the thickness;

(C)

description of tank system piping (material, diameter);

(D)

description of any internal and external pumps; and

(E)

sketch or drawing of tank including dimensions.

(3)

documented age of the tank system (if tank was previously used), if available, (otherwise, an estimate of the age);

(4)

description and evaluation of any leak detection equipment;

(5)

description and evaluation of any corrosion protection equipment, devices, or material;

(6)

description and evaluation of any spill prevention or overfill equipment;

(7)

description and evaluation of secondary containment for the tank system (secondary containment must meet minimum standards as specified in subsections (k)(1) through (k)(3) of this section) including applicable secondary containment for ancillary equipment as required in subsection 66265.193(f);

(8)

hazardous characteristics of the waste(s) that have been or will be handled;

(9)

prior to placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, professional engineer, registered in California, either of whom is trained and experienced in the proper installation of tank systems, shall inspect the system or component for the presence of any of the following items and document in writing the results of the inspection: (A) weld cracks or breaks; (B) scrapes of protective coatings; (C) corrosion; (D) any structural damage or inadequate construction or installation such as cracks, punctures, damaged fittings. All discrepancies shall be documented in the assessment and remedied before the tank system is placed in use.

(A)

weld cracks or breaks;

(B)

scrapes of protective coatings;

(C)

corrosion;

(D)

any structural damage or inadequate construction or installation such as cracks, punctures,

damaged fittings. All discrepancies shall be documented in the assessment and remedied before the tank system is placed in use.

(10)

all new tanks and ancillary equipment shall be tested for tightness prior to being placed in use. The results of the test(s) shall be documented in this assessment. Tank system integrity or leak test requirements must be in compliance with all local requirements. Prior to conducting a tank system integrity test or leak test, contact local agency staff for local requirements.

(11)

estimated remaining service life of the tank system based on findings of subsections (l)(1) through (l)(10).

(m)

The assessment specified in subsection (l) of this section is not required for the replacement of the following identical or functionally equivalent tank system parts or components:(1) pumps (same type and capacity); (2) plumbing or piping components such as unions, elbows, tees and gaskets; (3) valves and check valves; (4) piping and valve hangers and supports;

(1)

pumps (same type and capacity);

(2)

plumbing or piping components such as unions, elbows, tees and gaskets;

(3)

valves and check valves;

(4)

piping and valve hangers and supports;

(n)

Replacement of identical or functionally equivalent tank system parts or components not listed in subsection (m) of this section shall be approved by the CUPA prior to replacement or changeout. If the tank system part or component is determined to be identical or functionally equivalent by the CUPA, the assessment specified in subsection (l) of this section is not required. The owner or operator shall provide the CUPA, or the Department if there is no CUPA or the CUPA requests that the Department make a determination, with the following information in writing so that a determination can be made:(1) name, address, and EPA identification number of the facility; (2) date of planned replacement; (3) description part or component to be replaced; (4) description of the tank system and type of waste(s) handled; (5) description of how the part or component is identical or functionally equivalent to the part or component to be replaced.

(1)

name, address, and EPA identification number of the facility;

(2)

date of planned replacement;

(3)

description part or component to be replaced;

(4)

description of the tank system and type of waste(s) handled;

(5)

description of how the part or component is identical or functionally equivalent to the part or component to be replaced.