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provided in paragraph (c) of this section, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by a qualified Professional Engineer, in accordance with §270.11(d) of this chapter, that attests to the tank system's integrity by January 12, 1988.

(b) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated, to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

(1) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

(2) Hazardous characteristics of the waste(s) that have been and will be handled;

(3) Existing corrosion protection measures;

(4) Documented age of the tank system, if available (otherwise, an estimate of the age); and

(5) Results of a leak test, internal inspection, or other tank integrity examination such that:

(i) For non-enterable underground tanks, the assessment must include a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects, and

(ii) For other than non-enterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other integrity examination that is certified by a qualified Professional Engineer in accordance with §270.11(d) of this chapter, that addresses cracks, leaks, corrosion, and erosion.

[NOTE: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.]

(c) Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986, must conduct this assessment within 12

months after the date that the waste becomes a hazardous waste.

(d) If, as a result of the assessment conducted in accordance with paragraph (a), a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of §264.196.

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986, as amended at 71 FR 16905, Apr. 4, 2006]

§ 264.192 Design and installation of new tank systems or components.

(a) Owners or operators of new tank systems or components must obtain and submit to the Regional Administrator, at time of submittal of part B information, a written assessment, reviewed and certified by a qualified Professional Engineer, in accordance with §270.11(d) of this chapter, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must 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 stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Regional Administrator to review and approve or disapprove the acceptability of the tank system design, must 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:

(i) Factors affecting the potential for corrosion, including but not limited to:

(A) Soil moisture content;

(B) Soil pH;

(C) Soil sulfides level;

(D) Soil resistivity;

(E) Structure to soil potential;

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

(G) Existence of stray electric current;

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

(ii) 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:

(A) Corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;

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

(C) Electrical isolation devices such as insulating joints, flanges, etc.

[NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.]

(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; and

(5) Design considerations to ensure that:

(i) Tank foundations will maintain the load of a full tank;

(ii) 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 § 264.18(a); and

(iii) Tank systems will withstand the effects of frost heave.

(b) The owner or operator of a new tank system must 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 inspec-

tor or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tanks systems or components, must 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 must be remedied before the tank system is covered, enclosed, or placed in use.

(c) New tank systems or components that are placed underground and that are backfilled must 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.

(d) All new tanks and ancillary equipment must 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 must be performed prior to the tank system being covered, enclosed, or placed into use.

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

[NOTE: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System," may be used, where applicable, as guidelines for proper installation of piping systems.]

(f) The owner or operator must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under paragraph (a)(3) of this section, or other corrosion

protection if the Regional Administrator 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 must be supervised by an independent corrosion expert to ensure proper installation.

(g) The owner or operator must 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 paragraphs (b) through (f) of this section, that attest that the tank system was properly designed and installed and that repairs, pursuant to paragraphs (b) and (d) of this section, were performed. These written statements must also include the certification statement as required in § 270.11(d) of this chapter.

[51 FR 25472, July 14, 1986; 51 FR 29430, Aug. 15, 1986, as amended at 71 FR 16905, Apr. 4, 2006]

§ 264.193 Containment and detection of releases.

(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section must be provided (except as provided in paragraphs (f) and (g) of this section):

(1) For all new and existing tank systems or components, prior to their being put into service.

(2) For tank systems that store or treat materials that become hazardous wastes, within two years of the hazardous waste listing, or when the tank system has reached 15 years of age, whichever comes later.

(b) Secondary containment systems must be:

(1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

(2) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(c) To meet the requirements of paragraph (b) of this section, secondary containment systems must be at a minimum:

(1) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic).

(2) Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;

(3) Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Regional Administrator that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

(4) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the Regional Administrator that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

[NOTE: If the collected material is a hazardous waste under part 261 of this chapter, it is subject to management as a hazardous waste in accordance with all applicable requirements of parts 262 through 265 of this chapter. If the collected material is discharged through a point source to waters of