**Section 724.293 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 subsections (f) and (g)).

1) For a new or existing tank system or component, prior to their being put into service.

2) For a tank system that stores or treats materials that become hazardous wastes within two years after the hazardous waste listing, or when the tank system has reached 15 years of age, whichever comes later.

b) Secondary containment systems must fulfill the following:

1) It must be designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and

2) It must be capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

c) To meet the requirements of subsection (b), secondary containment systems must, at a minimum, fulfill the following:

1) It must be constructed of or lined with materials that are compatible with the wastes 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) It must be 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) It must be 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 demonstrates, by way of permit application, to the Agency that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

4) It must be 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 demonstrates to the Agency, by way of permit application, that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

BOARD NOTE: If the collected material is a hazardous waste under 35 Ill. Adm. Code 721, it is subject to management as a hazardous waste in accordance with all applicable requirements of 35 Ill. Adm. Code 722 through 728. If the collected material is discharged through a point source to waters of the State, it is subject to the NPDES permit requirement of Section 12(f) of the Environmental Protection Act and 35 Ill. Adm. Code 309. If discharged to a Publicly Owned Treatment Work (POTW), it is subject to the requirements of 35 Ill. Adm. Code 307 and 310. If the collected material is released to the environment, it may be subject to the reporting requirements of 35 Ill. Adm. Code 750.410 and federal 40 CFR 302.6.

d) Secondary containment for tanks must include one or more of the following devices:

1) A liner (external to the tank);

2) A vault;

3) A double-walled tank; or

4) An equivalent device, as approved by the Board in an adjusted standards proceeding.

e) In addition to the requirements of subsections (b), (c), and (d), secondary containment systems must satisfy the following requirements:

1) An external liner system must fulfill the following:

A) It must be designed or operated to contain 100 percent of the capacity of the largest tank within its boundary.

B) It must be designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system, unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event.

C) It must be free of cracks or gaps.

D) It must be designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tanks (i.e., it is capable of preventing lateral as well as vertical migration of the waste).

2) A vault system must fulfill the following:

A) It must be designed or operated to contain 100 percent of the capacity of the largest tank within the vault system's boundary;

B) It must be designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

C) It must be constructed with chemical-resistant water stops in place at all joints (if any);

D) It must be provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

E) It must be provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated fulfills the following:

i) It meets the definition of ignitable waste under 35 Ill. Adm. Code 721.121; or

ii) It meets the definition of reactive waste under 35 Ill. Adm. Code 721.123, and may form an ignitable or explosive vapor; and

F) It must be provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

3) A double-walled tank must fulfill the following:

A) It must be designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell;

B) It must be protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

C) It must be provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator demonstrates, by way of permit application, to the Agency that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

BOARD NOTE: The provisions outlined in the Steel Tank Institute document (STI) "Standard for Dual Wall Underground Steel Storage Tanks", incorporated by reference in 35 Ill. Adm. Code 720.111(a), may be used as a guideline for aspects of the design of underground steel double-walled tanks.

f) Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping, etc.) that meets the requirements of subsections (b) and (c), except as follows:

1) Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

2) Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

3) Sealless or magnetic coupling pumps and sealless valves that are visually inspected for leaks on a daily basis; and

4) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices, etc.) that are visually inspected for leaks on a daily basis.

g) Pursuant to Section 28.1 of the Environmental Protection Act, and in accordance with 35 Ill. Adm. Code 101 and 104, an adjusted standard will be granted by the Board regarding alternative design and operating practices only if the Board finds either that the alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the groundwater or surface water at least as effectively as secondary containment during the active life of the tank system, or that in the event of a release that does migrate to groundwater or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not receive an adjusted standard from the secondary containment requirements of this Section through a justification in accordance with subsection (g)(2).

1) When determining whether to grant alternative design and operating practices based on a demonstration of equivalent protection of groundwater and surface water, the Board will consider whether the petitioner has justified an adjusted standard based on the following factors:

A) The nature and quantity of the wastes;

B) The proposed alternative design and operation;

C) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and groundwater; and

D) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

2) When determining whether to grant alternative design and operating practices based on a demonstration of no substantial present or potential hazard, the Board will consider whether the petitioner has justified an adjusted standard based on the following factors:

A) The potential adverse effects on groundwater, surface water and land quality taking into account, considering the following:

i) The physical and chemical characteristics of the waste in the tank system, including its potential for migration;

ii) The hydrogeological characteristics of the facility and surrounding land;

iii) The potential for health risk caused by human exposure to waste constituents;

iv) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

v) The persistence and permanence of the potential adverse effects.

B) The potential adverse effects of a release on groundwater quality, taking into account;

i) The quantity and quality of groundwater and the direction of groundwater flow;

ii) The proximity and withdrawal rates of groundwater users;

iii) The current and future uses of groundwater in the area; and

iv) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality.

C) The potential adverse effects of a release on surface water quality, taking the following into account:

i) The quantity and quality of groundwater and the direction of groundwater flow;

ii) The patterns of rainfall in the region;

iii) The proximity of the tank system to surface waters;

iv) The current and future uses of surface waters in the area and water quality standards established for those surface waters; and

v) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality.

D) The potential adverse effect of a release on the land surrounding the tank system, taking the following into account:

i) The patterns of rainfall in the region; and

ii) The current and future uses of the surrounding land.

3) The owner or operator of a tank system, for which alternative design and operating practices had been granted in accordance with the requirements of subsection (g)(1), at which a release of hazardous waste has occurred from the primary tank system but which has not migrated beyond the zone of engineering control (as established in the alternative design and operating practices), must do the following:

A) It must comply with the requirements of Section 724.296, except Section 724.296(d); and

B) It must decontaminate or remove contaminated soil to the extent necessary to do the following:

i) Enable the tank system for which the alternative design and operating practices were granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release; and

ii) Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water; and

C) If contaminated soil cannot be removed or decontaminated in accordance with subsection (g)(3)(B), the owner or operator must comply with the requirement of Section 724.297(b).

4) The owner or operator of a tank system, for which alternative design and operating practices had been granted in accordance with the requirements of subsection (g)(1), at which a release of hazardous waste has occurred from the primary tank system and which has migrated beyond the zone of engineering control (as established in the alternative design and operating practices), must do the following:

A) Comply with the requirements of Section 724.296(a), (b), (c), and (d); and

B) Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed, or if groundwater has been contaminated, the owner or operator must comply with the requirements of Section 724.297(b); and

C) If repairing, replacing or reinstalling the tank system, provide secondary containment in accordance with the requirements of subsections (a) through (f), or make the alternative design and operating practices demonstration to the Board again, and meet the requirements for new tank systems in Section 724.292 if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil is decontaminated or removed and groundwater or surface water has not been contaminated.

h) In order to make an alternative design and operating practices, the owner or operator must follow the following procedures in addition to those specified in Section 28.1 of the Act and 35 Ill. Adm. Code 101 and 104:

1) The owner or operator must file a petition for approval of alternative design and operating practices according to the following schedule:

A) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with subsection (a).

B) For new tank systems, at least 30 days prior to entering into a contract for installation.

2) As part of the petition, the owner or operator must also submit the following to the Board:

A) A description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in subsection (g)(1) or (g)(2); and

B) The portion of the Part B permit application specified in 35 Ill. Adm. Code 703.202.

3) The owner or operator must complete its showing within 180 days after filing its petition for approval of alternative design and operating practices.

4) The Agency must issue or modify the RCRA permit so as to require the permittee to construct and operate the tank system in the manner that was provided in any Board order approving alternative design and operating practices.

i) All tank systems, until such time as secondary containment that meets the requirements of this Section is provided, must comply with the following:

1) For non-enterable underground tanks, a leak test that meets the requirements of Section 724.291(b)(5) or other tank integrity methods, as approved or required by the Agency, must be conducted at least annually.

2) For other than non-enterable underground tanks, the owner or operator must do either of the following:

A) Conduct a leak test, as in subsection (i)(1); or

B) Develop a schedule and procedure for an assessment of the overall condition of the tank system by a qualified Professional Engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection and the characteristics of the waste being stored or treated.

3) For ancillary equipment, a leak test or other integrity assessment, as approved by the Agency, must be conducted at least annually.

BOARD NOTE: The practices described in the API Publication, "Guide for Inspection of Refinery Equipment", Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks", incorporated by reference in 35 Ill. Adm. Code 720.111(a), may be used, where applicable, as a guideline for assessing the overall condition of the tank system.

4) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with subsections (i)(1) through (i)(3).

5) If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in subsections (i)(1) through (1)(3), the owner or operator must comply with the requirements of Section 724.296.

(Source: Amended at 42 Ill. Reg. 22614, effective November 19, 2018)