

Suffolk County
Department of Health Services

Division of Environmental Quality

OVERFILL ALARM SYSTEM REQUIREMENTS FOR TOXIC/HAZARDOUS MATERIAL STORAGE FACILITIES

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Suffolk County Department of Health Services  
Overfill Alarm System Requirements for  
Toxic/Hazardous Material Storage Facilities

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1.0 General

1.1 Article 12 of the Suffolk County Sanitary Code requires that toxic and/or hazardous materials storage tanks be equipped with a positive means of detecting an overfilling condition before any spillage can occur. The detection system shall include, but not necessarily be limited to, both visual and audible alarms.

1.2 Applicability (see §3.0 of these standards for exemptions)

1.2.1 This standard shall apply to the following types of toxic/hazardous materials storage tanks:

- all new and existing outdoor, aboveground tanks
- all new and existing indoor, aboveground tanks
- all new underground tanks

1.3 Submittal

1.3.1 A Permit to Construct, issued by this department, is **required before installation**.

1.3.2 Two copies of a signed Application for a Permit to Construct, along with two copies of the alarm system manufacturer's information, must be submitted along with a plot plan showing the location of all tanks and loading areas and the proposed location of the alarm panel.

1.3.3 The system manufacturer's information must include, but not be limited to, the type of level sensing probe, materials of construction, description of alarm panel and operational sequences.

2.0 Definitions

As defined in Article 12, §1203, and whenever used in this standard, the following terms shall have the respective meanings set forth or indicated:

2.1 Aboveground - when referring to tanks, means more than 90 percent exposed above the final ground or finished floor elevation.

- 2.2 Clearly Visible - when referring to tank filling, means an open top tank or tank constructed of transparent or translucent material whose liquid level and overflow point can be seen at all times by the operator filling the tank.
- 2.3 Commissioner - the Commissioner of the Suffolk County Department of Health Services.
- 2.4 Indoor Tanks - all portable containers, tanks and vessels, including processing baths, dip tanks, rinse tanks and wastewater treatment tanks, with an individual volume equal to or greater than 80 gallons, used to contain toxic or hazardous materials, regardless of the duration of time said tanks and vessels may contain the toxic or hazardous materials and regardless of their use.
- 2.5 Gravity Fed - pump is not used to fill a tank.
- 2.6 Manually Filled - the operator controlling filling, must physically empty smaller containers into the tank at the tank location.
- 2.7 Pressure Fed - pumps are used to fill a tank.
- 2.8 Remote Filled - tank filling takes place in another room or area away from the tank being filled.
- 2.9 Residential Parcel - a single body of land, or single building plot, zoned for single-family residential use.
- 2.10 Storage Facility - tanks, pipes, vaults, buildings, yards, pavements or fixed containers used or designed to be used, either singly or in any combination thereof, for the storage and/or transmission of toxic or hazardous materials or for the storage of portable containers containing toxic or hazardous materials.
- 2.11 Toxic or Hazardous Materials - any substance, solution or mixture which, because of its quality, quantity, concentration, physical, chemical or infectious characteristics, or any combination of the foregoing, presents, or may present, an actual or potential hazard to human health or to the drinking water supply if such substance, solution, mixture or combination thereof is discharged to the land or waters of the county of Suffolk. Toxic or Hazardous Materials shall include:
 - 2.11.1 Each and every substance, material or waste found listed in either or both Part 116 and Part 261, Title 40 of the Code of Federal Regulations, or Title 6, Part 371 of the New York State, Codes, Rules and Regulations.
 - 2.11.2 Acids and alkalies beyond the pH range of 4 to 10.
 - 2.11.3 Heavy metal sludges, mixtures and solutions in excess of standards.
 - 2.11.4 Petroleum products, including fuels and waste oils.

- 2.11.5 Organic solvents, including petroleum solvents, halogenated and non-halogenated hydrocarbons.
 - 2.11.6 Any material listed in Schedule I, Part 703.6 of the Official Compilation of New York Codes, Rules and Regulations, in excess of the concentration standards thereof, except for iron, manganese, foaming agents and pH, unless otherwise provided elsewhere in this article.
 - 2.11.7 Any substance not included within subdivisions 2.11.1 through 2.11.6 above, subsequently declared to be a toxic or hazardous material by the commissioner.
 - 2.11.8 Any solid or semi-solid material which, if left to stand, or if exposed to water, will leach out or wholly or partially dissolve forming a toxic or hazardous material as defined in subdivisions 2.11.1 through 2.11.7 above.
- 2.12. Toxic or Hazardous Waste
- 2.12.1 Toxic or hazardous materials, as defined in subdivision (2.11) above, generated by, or as the result of operations in, or the existence of any manufacturing or other industrial or commercial establishment, which toxic or hazardous materials are not actually used in a final product for sale, and shall include those toxic or hazardous materials retained as by-products of the operations within such manufacturing or other industrial or commercial establishment for the purpose of recouping salvage value; or
 - 2.12.2 Toxic or hazardous materials generated by one in possession or control of any residential premises, for which materials' disposal is intended, and which waste is not domestic wastewater without the admixture of non-sewage wastewater from any industrial process.
 - 2.12.3 All toxic and hazardous wastes are toxic and hazardous materials.
- 2.13 Underground when referring to tanks, means 10 percent or more below the final ground or finished floor elevation.

3.0 Exemptions

All tanks which meet any of the following criteria are exempt from the audible and visual alarm system requirement:

- 3.1 Open top tanks whose liquid level is clearly visible to the operator filling the tank at all times, or
- 3.2 Translucent or transparent tanks whose liquid level is clearly visible to the operator filling the tank at all times, or
- 3.3 Aboveground and underground tanks, located on a residential parcel, and aboveground tanks located

on industrial, commercial or agricultural properties, with an individual capacity less than 1,100 gallons used to store diesel oil, fuel oil, kerosene, waste oil or lubricating oil, can be equipped as follows:

Small Hand-Filled Tanks:

Aboveground tanks with a nominal capacity of 1,100 gallons or less (predominantly waste oil tanks) and that are gravity filled by hand from portable containers such as cans and bottles at the top of the tank, can be equipped with a mechanical float-type level gauge to detect an overfilling condition.

The level gauge must be clearly visible and marked with a red line above which an overfill could occur so that the person filling the tank can both easily monitor the filling activity and be warned of an impending overfill.

Small Pump-Filled Tanks:

Aboveground tanks with a nominal capacity of 1,100 gallons or less, that are pump filled and are used for the storage of diesel fuel, kerosene, #2 fuel oil or lubricating oil can be equipped with a device inserted into, but not obstructing, the vent that produces a whistling sound during the filling of the tank to detect an overfilling condition. The whistling sound must be audible to the person filling the tank and must indicate an overfilling condition at 95% of the capacity of the tank.

Prohibited Uses:

Tanks with elevated vents (10' above grade or higher) or tanks with vents that protrude through roofs or walls or tanks with remote fills are precluded from using this type of device for overfill prevention.

Small volume tanks, used for the storage of gasoline and aviation gasoline, must be equipped with intrinsically safe (UL listed) electrical alarm systems. The use of vent whistles or mechanical floats are not permitted. All alarm systems used on tanks installed in Suffolk County must be approved by the Suffolk County Department of Health Services. Use of an unapproved alarm system is prohibited.

4.0 Components

The level alarm systems shall consist of, but not be limited to, a liquid level sensing unit and alarm panel.

4.1 Level Sensor

4.1.1. The level sensing element may be any type: mechanical float, optical, ultrasonic, capacitance, conductance, etc., which is compatible with the material being stored and is easily testable.

4.1.2 The liquid level sensor will be rigidly mounted in the storage tank in order to provide overfill warning at the tank level corresponding to between 90% and 95% capacity.

4.2 Alarm Panel

The alarm panel shall be equipped with audible and visual warning devices.

- 4.2.1 The audible element must be a horn or bell which can be heard by the operator filling the storage tank.
- 4.2.2 The visual element must be a steady burning or flashing light which can be seen in daylight by the operator filling the tank.
- 4.2.3 The alarm panel must be equipped with a manual reset button which will deactivate the audible alarm at high liquid level indication, but the visual alarm must remain on until the liquid level drops below the high level. Subsequent high level conditions must activate both the audible and visual alarms.
- 4.2.4 The alarm panel must be equipped with a self-checking system capable of monitoring the circuitry, as well as the working condition of the audible/visual alarms and sensing probe. This self-checking feature may be either an automatic or manual operation. Should a malfunction be detected by this check system, the alarm panel must indicate the failure.
- 4.2.5 The alarm panel or remote audible alarm must be located where it will be seen and/or heard by the operator filling the tank.
- 4.2.6 For multiple tank installations, one visual alarm must be furnished for each tank. One audible alarm for the entire facility is acceptable, but it must be independently activated by each tank probe.

4.3 Electrical

- 4.3.1 All electrical wiring and components shall conform to all applicable electrical and building codes, and UL standards.
- 4.3.2 Electrical enclosures mounted on the tanks must be explosion proof where dictated by the tank contents.
- 4.3.3 Outdoor electrical enclosures must be weatherproof.
- 4.3.4 Power on/off switches on the level sensor or alarm panel or any other component of the level alarm system is not acceptable.
- 4.3.5 All components must be hard wired; plug-in type cords are not acceptable.

5.0 Operational Sequence

- 5.1 Upon high liquid level, the audible and visual alarm must activate.
- 5.2 On pressure fed tanks, the high-level alarm system must be interlocked with on-site pumps used to fill tanks.

- 5.2.1 The high-level alarm system must shut down the pumps and activate the audible/visual alarms upon high level.
- 5.2.2 The pump starter and level alarm system must be interlocked such that the pump filling the tank cannot be restarted until the liquid level drops below the high-level alarm condition.
- 5.2.3 Pumps incorporated into the delivery tanker truck need not be integral with the tank's high level alarm system.