Sec. 22a-449(d)-1. Control of the nonresidential underground storage and handling of oil and petroleum liquids

(a) **Definitions, applicability and purpose**

(1) Applicability

Owners and operators of the following types of facilities, as defined in subdivision (2) of this subsection, shall comply with the requirements of this section:

(A) Facilities used for storing heating oil for consumptive use on the premises where stored; and

(B) Farm facilities of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes.

(2) As used in this section:

Definitions

"Abandoned" means rendered permanently unfit for use.

"Abnormal loss or gain" means an apparent loss or gain in liquid exceeding 0.5 percent of (1) the volume of product used or sold by the owner or operator during any seven consecutive day period, or (2) the volumetric capacity of the tank or container; whichever is greater, as determined by reconciliation of inventory measurements made in accordance with subsection 22a-449 (d)-1 (g) of these regulations.

"CFR" means the Code of Federal Regulations revised as of July 1, 1991, unless otherwise specified.

"Discharge" means the emission of any water, substance or material into the waters of the state, whether or not such substance causes pollution.

"Existing facility" means a facility the construction or installation of which began prior to November 1, 1985, including, but not limited to, facilities which are abandoned and facilities which are temporarily out-of-service.

"Facility" means a system of interconnected tanks, pipes, pumps, vaults, fixed containers and appurtenant structures, singly or in any combination, which are used or designed to be used for the storage, transmission or dispensing of oil or petroleum liquids, including any monitoring devices. As used in Section 22a-449 (d)-1 of these regulations, the term "facility" refers only to nonresidential underground facilities and does not include residential underground heating oil storage tank systems.

"Failure" means a condition which can or does allow the uncontrolled passage of liquid into or out of a facility, and includes but is not limited to a discharge to the waters of the state without a permit issued pursuant to Section 22a-430 of the General Statutes.

"Failure determination" means the evaluation of a facility component in accordance with subsection 22a-449 (d)-1 (i) of these regulations to determine whether a failure has occurred.

"Farm" means a tract of land devoted to the production of crops or raising of animals, including, but not limited to, fish, and associated residences and improvements, including fish hatcheries, rangeland and nurseries with growing operations;

"Flammable Liquid" means a flammable liquid as determined in accordance with NFPA 30 and having a flash point below 100 degrees fahrenheit (37.8 degrees centigrade) and having a vapor pressure not exceeding 40 pounds per square inch (absolute) (2,068 millimeters mercury) at 100 degrees fahrenheit (37.8 degrees centigrade).

"Life expectancy" means the time period within which a failure is not expected to occur

as determined in accordance with subsection 22a- 449 (d)-1 (h) of these regulations.

"Life expectancy determination" means the evaluation of a facility component in accordance with subsection 22a-449 (d)-1 (h) of these regulations to determine its life expectancy.

"Liquid" means any fluid, including, but not limited to, oil and petroleum fluids.

"Listed" means included in a list published by a testing laboratory which (1) is approved by the Commissioner of Environmental Protection in consultation with the Bureau of the State Fire Marshal, (2) maintains periodic inspection of production of listed equipment or materials, and (3) states in their listing either that the equipment, material or procedure meets appropriate standards or has been tested and found suitable for use in a specified manner.

"New facility" means a facility the construction or installation of which begins on or after November 1, 1985, including, but not limited to, facilities which replace existing facilities, facilities which are moved from one location to another, facilities which are abandoned, and facilities which are temporarily out-of-service.

"NFPA 30" means National Fire Protection Association publication number 30 entitled, "Flammable and Combustible Liquids Code," as enforced by the State Fire Marshal pursuant to Section 29-320 of the Connecticut General Statutes and Sections 29-320-1, 29-320-2, and 29-320-3 of the Regulations of Connecticut State Agencies, as of the effective date of these regulations.

"NFPA 329" means National Fire Protection Association publication number 329 entitled, "Underground Leakage of Flammable and Combustible Liquids," as enforced by the state fire marshal pursuant to Section 29-320 of the Connecticut General Statutes and Sections 29-320-1, 29-320-2, and 29-320-3 of the Regulations of Connecticut State Agencies, as of the effective date of these regulations.

"Nonresidential" when referring to a facility means a facility which serves any commercial, industrial, institutional, public or other building, including, but not limited to, hotels and motels, boarding houses, hospitals, nursing homes and correctional institutions, but not including residential buildings.

"Oil or petroleum liquid" or "product" means oil or petroleum of any kind in liquid form including, but not limited to, waste oils and distillation products such as fuel oil, kerosene, naphtha, gasoline and benzene.

"Operator" means the person or municipality in control of, or having responsibility for, the daily operation of a facility.

"Owner" means the person or municipality in possession of or having legal ownership of a facility.

"Residential building" means any house, apartment, trailer, mobile home, or other structure, composed of four residential units or fewer, occupied by individuals as a dwelling provided that if the structure is not used solely as a dwelling, the nominal capacity of the facility, exclusive of piping, serving such structure does not exceed two thousand one hundred (2,100) gallons.

"Residential underground heating oil storage tank system" has the same meaning as provided in section 22a-449a(6) of the Connecticut General Statutes.

"Substantial modification" means the construction or installation of any addition to a

facility or the restoration or renovation of a facility which: increases or decreases the on-site storage capacity of the facility; significantly alters the physical configuration of the facility; or impairs or improves the physical integrity of the facility or its monitoring systems; or modifies the facility so as to comply with the standards for new facilities specified in subdivision 22a-449 (d)-1 (e) (1) of these regulations.

"Substantial modification" shall not include a modification for the purpose of extending life expectancy in accordance with subparagraph 22a-449(d)-1 (h) (2) (D) of these regulations.

"Temporarily out-of-service" means not in use, in that no regular filling or drawing is occurring; or not established and maintained in accordance with these regulations; or not regularly attended and secured.

"Underground" when referring to a facility or facility component means that ten percent or more of the volumetric capacity of the facility or component is below the surface of the ground and that portion which is below the surface of the ground is not fully visible for inspection.

(3) Purpose

The purpose of Section 22a-449(d)-1 is to establish standards for the construction, operation, maintenance, and closure of certain nonresidential underground facilities, as specified in subsection (a)(1) of this section, that contain oil or petroleum liquids and that are not regulated under sections 22a-449(d)-101 to 22a-449(d)-113, inclusive, of the Regulations of Connecticut State Agencies.

(b) **Discharges prohibited**

No owner or operator shall discharge any water, substance or material, including but not limited to oil or petroleum liquids, from any facility to the waters of the state without first obtaining a permit for such discharge pursuant to Section 22a-430 of the General Statutes, as amended.

(c) **Exemptions**

(1) Facilities which meet all of the following criteria are exempt from subsections 22a-449 (d)-1 (d), (g), (h) and (i) of these regulations:

(A) the nominal capacity exclusive of piping is less than two thousand one hundred (2,100) gallons; the sole intended use of the oil or petroleum liquid is for on-site heating or intermittent stationary power production such as stand-by electricity generation or irrigation pump power; (C) the oil or petroleum liquid stored is not intended for resale; and (D) the facility is not used for the storage or handling of waste oil.

(2) Facilities which are used solely for the storage, transmission or dispensing of viscous oil and petroleum liquids which will not flow at temperatures below sixty degrees Fahrenheit (60°)are exempt from the requirements of these regulations. For the purpose of this subdivision, a liquid will be deemed to flow if, when maintained for at least forty-eight hours at a temperature of sixty degrees fahrenheit (60°) and at a pressure of 14.7 pounds per square inch absolute, it assumes the shape of a container also maintained at a temperature of sixty degrees fahrenheit for at least forty-eight hours.

(3) Facilities used solely for on-site heating, process steam generation, other on-site combustion or manufacturing processes or waste oil storage are exempt from subdivision 22a-449 (d)-1 (g) (2).

(d) **Reporting**

(1) By May 8, 1986, the owner or operator of each existing facility shall notify the commissioner and the office of the local fire marshal of the results of the life expectancy determination required by subsection (h).

(2) Within thirty days following completion of installation of a new facility an owner or operator shall notify the commissioner and the office of the local fire marshal of the results of the life expectancy determination required by subsection (h).

(3) The notification required by subdivisions (1) and (2) of this subsection shall include but not be limited to the following: facility location and capacity, date of installation, contents, type of facility, and type of monitoring systems, if any, results of life expectancy determinations, and any other information which the commissioner deems necessary.

(4) By May 8, 1986, the owner or operator of an abandoned or temporarily out-of-service facility shall notify the commissioner of the location, type and capacity of such facility and the date it was abandoned or removed from service.

(5) Within thirty days of completion of a failure determination required by subsection (i), the owner or operator shall notify the commissioner and the office of the local fire marshal of the result of such failure determination.

(6) Owners and operators shall report any changes in information provided in accordance with this subsection within thirty days.

(7) Each notification required by this subsection shall be submitted on forms furnished or prescribed by the commissioner.

(e) **Design, construction, installation, and maintenance**

(1) All new facilities and new components of substantially modified facilities shall conform to the following standards:

(A) Each underground tank or container shall:

(i) be a listed fiberglass-reinforced plastic (FRP) tank which is equipped with contact plates under all fill and gauge openings and is chemically compatible with the contained oil or petroleum liquid as determined by the tank or container manufacturer's warranty; or

(ii) be a listed steel tank externally coated with a factory applied corrosion resistant coating approved by the manufacturer for the proposed use, and equipped with cathodic protection and permanent cathodic protection monitoring devices, and contact plates under all fill and gauge openings.

(B) All other underground facility components that routinely contain regulated substances and are in contact with the ground shall:

(i) be protected against corrosion by use of non-corrosive materials or steel components with factory applied corrosion resistant coating and cathodic protection and permanent cathodic protection monitoring devices;

(ii) be designed, constructed and installed so as to allow failure determination of all underground piping without the need for substantial excavation; and

(iii) be chemically compatible with the contained oil or petroleum liquid as determined by the manufacturer's warranty.

(C) The installation and maintenance of underground components of new facilities and the substantial modification of underground components of new or existing facilities shall be done in accordance with NFPA 30 and the manufacturer's specifications and

recommendations. If provisions of NFPA 30 are inconsistent with the manufacturer's specifications or recommendations, the provision which imposes the most stringent and protective requirement shall control. Within thirty (30) days after completion of installation, the owner or operator shall submit to the commissioner a statement signed by the installation contractor, certifying that the installation has been carried out in accordance with this subsection.

(D) All cathodic protection monitoring devices and cathodic protection systems for underground components shall meet the specifications of the manufacturer of the component(s) being protected and shall be installed and maintained in accordance with the specifications and recommendations of the manufacturer(s) of the monitoring device, the cathodic protection system, and the underground component being protected, as applicable. If a manufacturer's specifications or recommendations are inconsistent with any provision of these regulations, the provision which imposes the most stringent and protective requirement shall control. Within thirty (30) days after completion of installation, the owner or operator shall submit to the commissioner a statement signed by the installation contractor, certifying that the installation has been carried out in accordance with this subsection.

(E) All cathodic protection systems which protect underground facility components shall be tested annually. A structure to soil test voltage reading of at least minus 0.85 volts measured between the structure and a copper-copper sulfate electrode must be maintained. Voltage drops other than those across the structure electrolyte boundary must be considered for valid interpretation of the voltage measurements. Impressed current cathodic protection systems shall be checked monthly to assure that the system rectifier providing the source of current is operating properly. A monthly record of rectifier current and voltage output shall be maintained. If any cathodic protection system malfunctions or fails to meet the above structure to soil test voltage requirement, it shall be repaired as quickly as possible but in no event later than thirty (30) days from the date of discovery of the malfunction. Anodes shall be replaced when all other corrective measures which have been taken are not sufficient to maintain the structure to soil test voltage of at least minus 0.85 volts. Other cathodic protection criteria may be used upon written approval of the commissioner.

(2) No owner or operator of an existing facility shall use or operate any underground component of that facility beyond September 1, 1989, or for longer than five years beyond its life expectancy as determined in accordance with subsection 22a-449 (d)-1 (h) of these regulations, whichever is later, unless such component is modified so as to comply with the standards for new facilities specified in subdivision 22a-449 (d)-1 (e) (1) above. If life expectancy has not been determined in accordance with subsection 22a-449 (d)-1 (h) of these regulations, such component shall not be used or operated unless such component is modified so as to comply with the standards for new facilities specified in subdivision 22a-449 (d)-1 (e) (1) above. If the component is not so modified, it must be removed or abandoned in accordance with procedures specified in NFPA 30.

(3) No underground component of a facility shall be moved from one location to another without prior written approval of the commissioner.

(4) No owner or operator of a facility that complies with the standards for new facilities specified in subdivision 22a-449 (d)-1(e) (1) above shall use or operate any underground

component of that facility beyond its life expectancy as determined in accordance with subsection 22a-449 (d)-1 (h) of these regulations. Prior to the last day of the life expectancy of an underground component of a facility that complies with the standards for new facilities specified in subdivision 22a-449 (d)-1 (e) (1) above, the owner or operator shall remove or abandon the underground component in accordance with the procedures specified in NFPA 30.

(f) **Transfer of facilities**

(1) No owner or operator shall transfer ownership, possession or control of any new or existing facility without full disclosure to the transferee of the status of the facility with respect to compliance with these regulations at least fifteen (15) days prior to the transfer. Such disclosure shall include an up-to-date copy of the information submitted to the commissioner pursuant to subsection (d).

(g) **Records; abnormal loss or gain**

(1) Activity records. The owner or operator of a new or existing facility shall assure the maintenance of up-to-date records of significant construction or installation activities; monitoring; substantial modifications; abandonment, removal or replacement of underground components or protective devices for such components; and any other activity required by an order of the commissioner. The owner or operator shall review such records and attest to their accuracy by signing them no later than seven days following completion of the recorded activity.

(2) Daily inventory records

(A) The owner or operator of a new or existing facility shall assure that the following information is recorded: on a daily basis, the amount of product sold, used and received, and the level of water and product in the tank or container; and on a weekly basis, a reconciliation comparing these figures to determine whether an abnormal loss or gain has occurred. Separate records shall be maintained for each system of interconnected tanks or containers and serving pumps or dispensers. The owner or operator shall review such records and attest to their accuracy by signing them no later than seven days following their recording.

(B) Daily inventory measurements shall be made by gauge or gauge stick or by readout from a listed automatic monitoring device. Such measuring devices shall be calibrated in accordance with the manufacturer's specifications and recommendations.

(C) Daily inventory measurements need not be recorded on those days when a facility is not in operation, except that if such period exceeds fifteen consecutive days inventory measurements shall be recorded on every fifteenth day. A day on which product is delivered to the facility shall be considered a day of operation.

(D) The commissioner may require an owner or operator to perform a failure determination of any facility for which daily inventory records are not maintained in accordance with this subsection.

(E) When inventory reconciliation indicates an abnormal loss or gain which is not explainable by spillage, temperature variations or other known causes, the owner or operator shall assure the immediate investigation and correction of the source of the abnormal loss or gain. At a minimum, the owner or operator shall take as many of the following steps as necessary to confirm an abnormal loss or gain:

(i) When an inventory record error is not apparent, a recalculation to determine abnormal loss or gain shall be made starting from a point where the records indicate no abnormal loss or gain;

(ii) A detailed visual inspection of those components of the facility which are readily accessible for evidence of failure shall be performed;

(iii) The dispensers of the particular oil or petroleum liquid in question shall be checked for proper calibration;

(iv) A failure determination shall be performed on the piping system between the storage tank or container and dispenser(s) in accordance with subsection (i) of these regulations; and

(v) A failure determination shall be performed on the tank or container in accordance with subsection (i) of these regulations.

(F) When an abnormal loss or gain is confirmed, the owner or operator shall immediately report the abnormal loss or gain to the state police in accordance with Section 22a-450 of the General Statutes, as amended.

(3) All records required by subdivisions (1) and (2) of this subsection shall be kept on the premises of the facility for a period of at least five years and shall be available for immediate inspection by the commissioner or his or her representative during reasonable hours.

(h) **Life Expectancy**

This subsection, in conjunction with subsection 22a-449 (d)-1 (i) of these regulations, specifies when a failure determination must be performed, and when the owner and operator must discontinue use of a facility component in accordance with subdivisions 22a-449 (d)-1 (e) (2) and (e) (4) of these regulations.

(1) Life expectancy determinations shall be conducted for underground components of new facilities within thirty (30) days following completion of installation or substantial modification of the component, and shall be conducted for underground components of existing facilities by May 8, 1986, as specified in subsection 22a-449 (d)-1 (d) of this section.

(2) Life expectancy shall be as follows:

(A) For fiberglass-reinforced plastic (FRP) facility components, the period of the manufacturer's corrosion or structural warranty, whichever is shorter.

(B) For cathodically protected facility components that meet the requirements of subdivision 22a-449 (d)-1 (e) (1) of these regulations, the period of the manufacturer's corrosion or structural warranty, whichever is shorter, or the life expectancy of the existing or replacement anode(s) as calculated using standard formulae approved in writing by the commissioner. If the cathodic protection system malfunctions or fails to meet the structure to soil voltage requirement in subparagraph 22a-449 (d)-1 (e) (1) (E) of these regulations, and is not repaired or replaced within thirty days, the life expectancy of the facility components protected by the system shall be reestablished in accordance with either subparagraph (2) (C) or subdivision (3) of this subsection. If life expectancy must be reestablished in accordance with subparagraph 22a-449 (d)-1 (2) (C) of these regulations, the period specified by subparagraph 22a-449 (d)-1 (2) (C) of these regulations shall be deemed to have begun on the earliest date of malfunction or the earliest date on which the

structure to soil test voltage reading was less negative than minus 0.85 volts, as applicable, provided that the period specified by subparagraph 22a-449 (d)-1 (2) (C) of these regulations shall not extend beyond the last day of the component's initial life expectancy period.

(C) For facility components not covered in subparagraphs (2) (A) and (2) (B) of this subsection, fifteen years from the date of installation. If the date of installation cannot be documented, the life expectancy shall be determined by a method approved by the commissioner.

(D) The life expectancy of existing facility components which are not in compliance with the standards listed in subdivision 22a-449 (d)-1 (e) (1) of these regulations may be extended by any method, provided:

(i) a failure of the facility component in question has never occurred, as determined by a failure determination conducted in accordance with subdivision 22a-449 (d)-1 (i) (1) of these regulations, or by an alternative method used with the prior written approval of the commissioner;

(ii) the facility component shall not be used or operated for longer than five years beyond its extended life expectancy;

(iii) no tank or container shall be lined more than once to extend its life expectancy;

(iv) the period for which the life expectancy will be extended shall be determined by the owner or operator in a manner approved in writing by the commissioner;

(v) the facility component has not exceeded its original life expectancy as of the date of lining installation; and

(vi) the facility component is not used to store gasoline or other flammable liquids.

(3) The life expectancy of a facility component may be determined by a method other than those set forth in subdivision (2) of this subsection upon written approval of the commissioner.

(i) **Failure determination**

(1) Failure determinations shall consist of any test that takes into consideration the temperature coefficient of expansion of the product being tested as related to any temperature change during the test, and is capable of detecting a loss of 0.05 gallons per hour. Such test shall be conducted in accordance with NFPA 329. Failure determination equipment and any methods of release detection shall be installed, calibrated, operated and maintained in accordance with the manufacturer's instructions including routine maintenance and service checks for operability and running condition.

(2) Failure determinations shall be conducted by the owner or operator for all underground components of new and existing facilities as follows:

(A) On all fiberglass-reinforced plastic (FRP) facility components, within three to six months after their installation, and within twenty-four to twenty-one months and within twelve to nine months prior to the end of their life expectancy.

(B) On all cathodically protected facility components, within twenty-four to twenty-one months and within twelve to nine months prior to the end of their life expectancy.

(C) Beginning on November 1, 1988, on all existing facility components which are not in compliance with the standards listed in subdivision 22a-449 (d)-1 (e) (1) of these regulations, within thirty-six to thirty-three months prior to the end of their life expectancy and annually thereafter.

(3) Alternative methods and schedules for failure determination may be used with the prior written approval of the commissioner.

(j) **Failures**

(1) An owner or operator of a new or existing facility shall report any failure to the state police immediately, in accordance with Section 22a-450 of the Connecticut General Statutes, as amended.

(2) The owner or operator of a new or existing facility at which a failure occurs shall immediately empty and discontinue the use of the failed facility component and:

(A) Remove or abandon it within ninety days in accordance with procedures specified in NFPA 30; or

(B) Repair it within sixty days; or

(C) Replace all damaged components in accordance with the standards listed in subdivision (e) (1) of these regulations.

(3) The owner or operator of a new or existing facility which discharges oil or petroleum liquids without a permit issued pursuant to Section 22a-430 of the General Statutes shall immediately cease such discharge and reclaim, recover and properly dispose of the discharged liquid and any other substance contaminated by it, restore the environment to a condition and quality acceptable to the commissioner, and repair damage caused by the discharge, all to the satisfaction of the commissioner.

(4) When a failure occurs at a new or existing facility, all of such facility's components shall be evaluated within thirty days to determine whether similar conditions to that which caused the failure exist. Within ten (10) days following such evaluation, the owner or operator shall notify the commissioner in writing of the methods and results of each such evaluation. If an additional failure is detected, the owner or operator shall act in accordance with this subsection.

(k) **Abandoned and temporarily out-of-service facilities**

(1) An owner or operator shall notify the commissioner in writing within thirty days when a new or existing facility is abandoned or rendered temporarily out-of-service.

(2) A facility or facility component shall be abandoned in accordance with procedures specified in NFPA 30.

(3) No person or municipality shall use or operate an abandoned facility.

(4) No person or municipality shall use or operate a temporarily out-of-service facility without giving prior written notice to the commissioner that such facility will be used or operated.

(*l*) **Variances**

(1) The commissioner may grant a variance or partial variance from one or more of the provisions of this section provided such variance will not endanger the public health, safety or welfare or allow pollution of the air, land or waters of the state. An application for a variance shall be submitted by the owner or operator on a form furnished or prescribed by the commissioner and shall include such information as he or she requires.

(2) Failure to supply all information necessary to enable the commissioner to make a determination regarding the application shall be cause for rejection of the application.

(3) In acting on a request for a variance, the commissioner shall balance the degree to which compliance with the requirement in question would create an undue hardship for the

applicant, against the benefit to the environment and the public from the applicant's strict compliance with that requirement.

(4) The commissioner may reject an application for a variance as untimely if it is received less than ninety days prior to the required date of compliance for which the variance is sought or if the facility is not in compliance with the requirement for which the variance is sought. For those existing facilities or underground components which are required to be removed or modified by September 1, 1989 in accordance with subparagraph (e) (2) of this section, no application for a variance from the requirements of that subparagraph shall be accepted after August 1, 1988, which date was the original deadline for such applications when these regulations were first adopted.

(5) The commissioner may limit the duration of a variance and include in a variance any conditions which he or she deems necessary. A variance may be revoked or modified for failure to comply with any such conditions.

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