Sec. 22a-449(d)-102. UST systems: design, construction installation and notification

(a) Performance standards for new UST systems.

In order to prevent releases due to structural failure, corrosion, or spills and overfills for the operational life of the UST system, all owners and operators of new UST systems shall meet the following requirements. Any substantial modification of UST systems shall meet the following requirements:

(1) Tanks. Each tank shall be listed and properly designed and constructed, and any portion underground that routinely contains product shall be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(A) The tank is constructed of fiberglass-reinforced plastic; or

(B) The tank is constructed of steel and cathodically protected including a permanent cathodic protection monitoring device in the following manner:

(i) The tank is coated with a factory applied suitable dielectric material approved by the manufacturer for the proposed use;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current operating status as required in subdivision 22a-449 (d)-103 (b) (3) of these regulations; and

(iv) Cathodic protection systems are operated and maintained in accordance with subsection 22a-449 (d)-103 (b) of these regulations and manufacturer's specifications to the extent such specifications are no less stringent than subsection 22a-449 (d)-103 (b) of these regulations, or according to guidelines established by the implementing agency and have permanent monitoring devices; or

(C) The tank construction and corrosion protection are determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than subdivisions 22a-449 (d)-102 (a) (1) (A) and (B) of these regulations and such protection has been approved in writing by the implementing agency prior to installation of the UST system.

(2) Tank Notes

(A) The following industry codes may be used to comply with subdivision 22a-449 (d)-102 (a) (1) (A) of these regulations: Underwriters Laboratories Standard 1316, "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products"; Underwriter's Laboratories of Canada CAN4-S615-M83, "Standard for Reinforced Plastic Underground Tanks for Petroleum Products"; or American Society of Testing and Materials Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks."

(B) The following codes and standards may be used to comply with subdivision 22a-449 (d)-102 (a) (1) (B) of these regulations:

(i) Steel Tank Institute "Specification for STI-P3 System of External Corrosion Protection of Underground Steel Storage Tanks";

(ii) Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks";

(iii) Underwriters Laboratories of Canada CAN4-S603-M85, "Standard for Steel

Underground Tanks for Flammable and Combustible Liquids," and CAN4-G03.1-M85, "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids," and CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems"; or

(iv) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids."

(3) Piping. The piping that routinely contains regulated substances and is not in contact with the ground shall meet the requirements in subparagraph 22a-449 (d)-102 (a) (9) of these regulations. The piping that routinely contains regulated substances and is in contact with the ground shall be properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(A) The piping is constructed of fiberglass-reinforced plastic; or

(B) The piping is constructed of steel and cathodically protected in the following manner:

(i) The piping is coated with a suitable dielectric material;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current operating status as required in subdivision 22a-449 (d)-103 (b) (3) of these regulations; and

(iv) Cathodic protection systems shall have permanent monitoring devices and shall be operated and maintained in accordance with subsection 22a-449 (d)-103 (b) of these regulations and manufacturer's specifications to the extent such specifications are no less stringent than subsection 22a-449 (d)-103 (b) of these regulations, or according to guidelines established by the implementing agency; or

(C) The piping construction and corrosion protection are determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in subparagraphs 22a-449 (d)-102 (a) (3) (A) and (B) of these regulations and such protection has been approved in writing by the implementing agency and have permanent monitoring services; prior to the installation of the UST system.

(4) Piping Notes

(A) The following codes and standards may be used to comply with subparagraph 22a-449 (d)-102 (a) (3) (A) of these regulations:

(I) Underwriters Laboratories Subject 971, "UL Listed Non-Metal Pipe";

(ii) Underwriters Laboratories Standard 567, "Pipe Connectors for Flammable and Combustible and LP Gas";

(iii) Underwriters Laboratories of Canada Guide ULC-107, "Glass-Fiber-Reinforced Plastic Pipe and Fittings for Flammable Liquids"; and

(iv) Underwriters Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors."

(B) The following codes and standards may be used to comply with subparagraph 22a-449 (d)-102 (a) (3) (B) of these regulations:

(I) National Fire Protection Association Standard 30, "Flammable and Combustible

Liquids Code";

(ii) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems";

(iii) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; and

(iv) National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems."

(5) Spill and overfill prevention equipment.

(A) Except as provided in subparagraph (B) of this subdivision, to prevent spilling and overfilling associated with product transfer to an UST system, owners and operators shall use the following:

(i) Spill prevention equipment that prevents the release of regulated substances to the environment when the transfer hose is detached from the fill pipe; and

(ii) Overfill prevention equipment that:

(I) Automatically shuts off flow into the tank when the tank is no more than 95 percent full; or

(II) Alerts the transfer operator when the tank is no more than 90 percent full by triggering a high-level alarm or restricting the flow into the tank, provided that on or after May 30, 2022, flow restrictors in vent lines shall not be used to comply with this subclause.

(B) Owners and operators are not required to use the spill and overfill prevention equipment specified in subparagraph (A) of this subdivision if:

(i) Upon written request by the owner or operator prior to installation, the commissioner determines, in writing, that alternative equipment is no less protective of human health and the environment than the equipment specified in subparagraph (A) of this subdivision; or

(ii) The UST system is filled by transfers of no more than 25 gallons at one time.

(6) Installation. All tanks and piping shall be properly installed and maintained in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions, NFPA 30 requirements and sections 22a-449 (d)-102 and 22a-449 (d)-103 of these regulations. If the provisions of these requirements are inconsistent, the provision which imposes the most stringent and protective requirement shall control. All underground piping shall be designed, constructed and installed so as to allow line and tank tightness testing in accordance with section 22a-449 (d)-104 of these regulations without the need for substantial excavation.

(7) Tank and piping system installation practices and procedures described in the following codes, to the extent such practices and procedures are no less stringent and protective than the requirements of NFPA 30, may be used to comply with the requirements of subdivision 22a-449 (d)-102 (a) (6) of these regulations:

(A) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System"; or

(B) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(C) American National Standards Institute Standard B31.3, "Petroleum Refinery Piping," and American National Standards Institute Standard B31.4 "Liquid Petroleum

Transportation Piping System."

(8) Certification of Installation. Within thirty (30) days after completion of installation of an UST system component, 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 sections 22a-449 (d)-101 through 22a-449 (d)-113 of these regulations. In addition all owners and operators shall ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subdivision 22a-449 (d)-102 (a) (6) of these regulations by providing a certification of compliance on the UST notification form in accordance with subsection 22a-449 (d)-102 (b) of these regulations:

(A) The installer has been certified by the tank and piping manufacturers; or

(B) The installer has been certified or licensed by the implementing agency; or

(C) The installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation; or

(D) The installation has been inspected and approved in writing by the implementing agency; or

(E) All work listed in the manufacturer's installation checklists has been completed; or

(F) The owner and operator have complied with another method for ensuring compliance with subdivision 22a-449 (d)-102 (a) (6) of these regulations that is determined by the implementing agency by prior written approval to be no less protective of human health and the environment.

(9) Piping. The metallic piping that routinely contains regulated substances and is not in contact with the ground shall be properly maintained and designed, constructed and protected from contact with the ground and ground water for its operational life. Such piping protection shall be continuously monitored during its operational life for failure. Records of such monitoring shall be maintained to demonstrate compliance with this protection and monitoring requirement in accordance with subsection 22a-449 (d)-103 (e).

(10) Cathodic protection systems. All cathodic protection systems shall have permanent monitoring devices and all cathodic protection monitoring devices and cathodic protection systems for UST system 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 component being protected, as applicable. If a manufacturer's specifications and recommendations are inconsistent with any provision of sections 22a-449 (d)-102 and 22a-449 (d)-103 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 section 22a-449 (d)-102 and 22a-449 (d)-103 of these regulations.

(11) On and after August 8, 2012, no owner or operator shall replace, install, operate or use an underground storage tank system installed on or after August 8, 2012, unless such underground storage tank system is equipped with a new under-dispenser containment sump.

(12) On and after August 8, 2012, no owner or operator shall replace or install a piping

containment sump unless such piping containment sump is a new piping containment sump.

(13) On and after August 8, 2012, no owner or operator shall replace or install an under-dispenser containment sump unless such under-dispenser containment sump is a new under-dispenser containment sump.

(14) On and after August 8, 2012, no owner or operator shall replace: (1) a dispenser and more than fifty percent of flex-joint or flexible piping, that is physically located directly beneath the dispenser, unless a new under-dispenser containment sump has been installed for such dispenser; or (2) more than fifty per cent of the dispensers at a facility, unless a new under-dispenser containment sump has been installed for each dispenser at the facility, except that the requirement of this subdivision shall not apply to a dispenser that is replaced due to damage resulting from an accident or vandalism.

(15) Testing requirements for underground storage tank systems.

(A) (i) An UST system installed on or after December 1, 2021, shall not be used or operated until the owner or operator of such system conducts testing, in accordance with subparagraph (F) of this subdivision, to demonstrate that there is no release or loss of any liquids from any part of such system.

(ii) The owner or operator of an UST system installed on or after August 8, 2012, but before December 1, 2021, shall conduct testing, in accordance with subparagraph (F) of this subdivision, to demonstrate that there is no release or loss of any liquids from any part of such system. The testing required by this clause shall be conducted no later than 3 years after the date the last test was, or should have been conducted, or December 1, 2022, whichever is later.

(iii) The owner or operator of an UST system installed before August 8, 2012, shall conduct testing, in accordance with subparagraph (F) of this subdivision, to demonstrate that there is no release or loss of any liquids from any part of such system, provided such testing does not need to include a piping containment sump or under dispenser containment sump unless such sumps meet the requirements of a new piping containment sump or a new under-dispenser containment sump. The testing required by this clause shall be conducted no later than December 1, 2022.

(B) No later than 3 years after the date for conducting testing required by subparagraph (A) of this subdivision, and at least once every 3 years thereafter, the owner or operator of an UST system shall conduct testing, in accordance with subparagraph (F) of this subdivision, to demonstrate that there is no release or loss of any liquids from any part of such system. The testing required by this subparagraph, for UST systems installed before August 8, 2012, does not need to include a piping containment sump or under dispenser containment sump unless such sumps meet the requirements of a new piping containment sump or a new under-dispenser containment sump.

(C) Any such owner or operator shall cease using or operating an UST system if any test conducted pursuant to subparagraphs (A) or (B) of this subdivision fails to demonstrate that there is no release or loss of any liquids from any part of such system. Such owner or operator shall not resume using or operating such UST system until subsequent testing, in accordance with subparagraph (F) of this subdivision, demonstrates that there is no release or loss of any liquids from any part of such system.

(D) Any such owner or operator of an UST system equipped with secondary containment

systems with continuous monitoring that automatically monitors the integrity of both primary and secondary containment, such as systems that are hydrostatically monitored or under constant vacuum, is exempt from the testing required by subparagraphs (A) and (B) of this subdivision.

(E) The owner or operator of an UST system shall maintain the results of all testing to demonstrate compliance with this subdivision in accordance with the requirements of section 22a-449(d)-103(e)(4) of the Regulations of Connecticut State Agencies. The owner or operator may store and retrieve electronically the results of all such testing. The owner or operator shall provide such results to the commissioner upon request. The results shall be provided to the commissioner within the time frame specified in any such request, but if no time frame is specified, no later than 30 days after any such request.

(F) Except as is specified in this subdivision for UST systems installed before August 8, 2012, any test conducted to satisfy the requirements of this subdivision shall be capable of determining if there is a release or any loss of liquids from any part of the UST system, including, but not limited to, any part of a new piping containment sump and a new under-dispenser containment sump. The owner or operator shall use a qualified individual or company who has the expertise to perform and document the results of the testing required by this subdivision and shall ensure that the tests required by this subdivision use the best available technology or that such tests are conducted in accordance with the manufacturer's guidelines and standards. If there are no manufacturer's guidelines or standards, the owner or operator shall ensure that such tests are conducted in accordance with an applicable method specified in an industry code or engineering standard. If there are no applicable manufacturer's guidelines or standards, industry codes, or engineering standards, the owner or operator shall ensure that such tests using a test method that, before use, is approved by a registered professional engineer licensed in the state of Connecticut. If the commissioner deems any of the foregoing test methods to be unacceptable, the commissioner shall post on the department's internet website a list of such unacceptable test methods.

(16) If an alarm, sensor or similar device in a new under-dispenser containment sump or a new piping containment sump indicates that liquid is present in such sump, the owner or operator of such sump shall (A) immediately investigate to determine if liquid is present and identify the cause for the presence of such liquid; (B) immediately take corrective measures in accordance with all applicable federal, state, and local requirements; (C) remove all petroleum from such sump not later than twenty-four hours after any alarm or similar device indicates that liquids are present in such sump; and (D) remove all other liquids, including but not limited to, water, from such sump not later than seventy-two hours after any alarm or similar device indicates that liquids are present in such sump. Any liquids removed from any such containment sump shall be managed and disposed of in accordance with all applicable requirements.

(17) No person, including but not limited to an owner or operator, shall remove, disable or otherwise render inoperable any sensor in a new under-dispenser containment sump or new piping containment sump or any alarm or other device used to indicate whether liquids are present in any such sump. No owner or operator shall dispense petroleum or any hazardous substances from an underground storage tank system equipped with a new under-dispenser containment sump or a new piping containment sump if any sensor in such sump,

or any alarm or other device used to indicate whether liquids are present in any such sump, is removed, disabled or otherwise inoperable.

(18) The requirements of this subsection regarding an under-dispenser containment sump shall not apply to an underground storage tank system that does not have a dispenser.

(b) Notification requirements.

(1) Any owner or operator of an UST system shall give notice to the commissioner in accordance with this subsection.

(2) By May 8, 1986, the owner or operator of each petroleum UST system, the construction or installation of which began prior to November 1, 1985, shall notify the commissioner and the office of the local fire marshal of the results of the life expectancy determination required by section 22a-449 (d)-111 of these regulations.

(3) Within 180 days of the effective date of these regulations, the owner or operator of each hazardous substance UST system, the construction or installation of which began prior to the effective date of these regulations, shall notify the commissioner and the office of the local fire marshal of the results of the life expectancy determination required by section 22a-449 (d)-111 these regulations.

(4) Within thirty (30) days following the completion of installation of a petroleum UST system, the construction or installation of which begins on or after November 1, 1985, including, but not limited to, UST systems which replace UST systems and UST systems which are moved from one location to another; 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 section 22a-449 (d)-111 of these regulations.

(5) Within thirty (30) days following the completion of installation of a hazardous substance UST system, the construction or installation of which began on or after the effective date of these regulations, including, but not limited to, UST systems which replace UST systems and UST systems which are moved from one location to another; 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 section 22a-449 (d)-111 of these regulations.

(6) The notification required by subdivisions 22a-449 (d)-102 (b) (2), (3), (4), and (5) of these regulations shall include but not be limited to the following: UST system location and capacity, date of installation, contents, type of UST system, and type of monitoring systems, if any, results of life expectancy determinations, and other information which the commissioner deems necessary.

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

(8) An owner or operator of a UST system shall notify the commissioner in writing within thirty (30) days when a UST system is abandoned or rendered temporarily out-of-service.

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

(10) Within thirty (30) days of completion of a tank tightness test or line tightness test required by sections 22a-449 (d)-101 through 22a-449 (d)-113 of these regulations, the

owner or operator shall notify the commissioner and the office of the local fire marshal of the result of such tightness test.

(11) Owners and operators shall report any changes in information provided in accordance with section 22a-449 (d)-102 of these regulations within thirty (30) days.

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

(13) Notices required to be submitted in accordance with subsection 22a-449 (d)-102 (b) of these regulations for tanks installed after December 22, 1988 shall also provide all of the information in section VII of the form as required in subsection 22a-449 (d)-109 (x) for each tank for which notice shall be given.

(14) All owners and operators of new UST systems shall certify in the notification form compliance with the following requirements:

(A) Installation of tanks and piping under subdivision 22a-449 (d)-102 (a) (8) of these regulations;

(B) Cathodic protection of steel tanks and piping under subdivisions 22a-449 (d)-102 (a) (1) and (3) of these regulations;

(C) Financial responsibility under section 22a-449 (d)-109 of these regulations; and

(D) Release detection under subsection 22a-449 (d)-104 (c) and (d) of these regulations.

(15) All owners and operators of new UST systems shall ensure that the installer certifies in the notification form that the methods used to install the tanks and piping complies with the requirements in subdivision 22a-449 (d)-102 (a) (6) of these regulations.

(16) Beginning October 24, 1988, any person who sells a tank intended to be used as an underground storage tank shall notify the purchaser of such tank of the owner's notification obligations under 40 CFR 280.22 (a). The form provided in subsection 22a-449 (d)-109 (z) of these regulations may be used to comply with this requirement.

(Effective July 28, 1994; Amended May 31, 2012; Amended December 1, 2021)