

ILLINOIS REGISTER

OFFICE OF THE STATE FIRE MARSHAL

NOTICE OF EMERGENCY AMENDMENT

TITLE 41: FIRE PROTECTION
CHAPTER I: OFFICE OF THE STATE FIRE MARSHAL

PART 175
TECHNICAL REQUIREMENTS FOR UNDERGROUND STORAGE TANKS AND THE
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AUTHORITY: Implementing the Gasoline Storage Act [430 ILCS 15] and authorized by Section 2 of the Gasoline Storage Act [430 ILCS 15/2].

SOURCE: Adopted at 34 Ill. Reg. 13358, effective September 2, 2010; emergency amendment at 37 Ill. Reg. _____, effective _____, for a maximum of 150 days.

SUBPART F: RELEASE DETECTION

Section 175.640 Methods of and Requirements for Release Detection for Piping
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Owners and operators of petroleum USTs shall provide release detection for all piping containing regulated substances. The release detection must meet the requirements specified in this Section.

- a) Pressurized piping systems shall comply with the following requirements:
 - 1) Both new and existing pressurized piping installations shall be equipped with automatic line leak detectors.
 - 2) Every pressurized piping line installed after February 1, 2008 shall be equipped with interstitial monitoring sensors at all piping sumps, dispenser sumps, and piping junction sumps. As of September 1, 2010, these sensors must immediately shut off the submersible pump supplying that line upon detection of a release, except for USTs serving emergency power generators. Sensors for USTs serving emergency power generators shall trigger a local alarm upon the detection of a release. The automatic shutoff shall be deactivated in any UST serving emergency power generators where such function has been previously installed. Pursuant to Section 175.630(g), all testing of interstitial monitoring sensors shall be tested ~~conducted~~ annually, and the sensors inspected for operability at least once per month and a record of the inspection results generated.

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- 3) All new and existing sump sensors must be installed so as to detect liquid below the lowest contained entry point.
- 4) Mechanical and electronic line leak detectors that alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm may be used only if they detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within one hour, except for USTs serving emergency power generators. All line leak detectors must have a functionality test performed annually. Self-diagnosing line leak detectors are not alone sufficient to meet the requirement for an annual functionality test. Automatic line leak detectors for USTs serving emergency power generators shall trigger a local alarm upon the detection of a release. Any automatic flow restriction or shutoff shall be deactivated in pressurized piping serving emergency generators where such function has been previously installed.
- 5) In addition to utilizing automatic line leak detectors, pressurized piping systems shall utilize either line tightness testing pursuant to this subsection (a)(5) or monthly monitoring pursuant to subsection (c) of this Section. Line tightness testing requirements may be met by one of the following methods:
 - A) Pressurized lines must have an annual precision test that is capable of detecting a 0.1 gallon per hour leak rate at 1.5 times the operating pressure for 30 minutes. Use of an inert gas to pressurize piping is also acceptable. Use of air to pressurize piping that contains product is prohibited.
 - B) The use of electronic line leak detection that is able to detect a 0.1 gallon per hour leak at 1.5 times the operating pressure in an annual test of the line, with the records of the 2 most recent annual tests kept on site or available within 30 minutes or before OSFM completes its inspection, whichever is later.
 - C) A method meeting the requirements of the NWGLDE publication "List of Leak Detection Evaluations for Storage Tank Systems", as referenced in 41 Ill. Adm. Code 174.210, or, if unavailable, as approved by OSFM.

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- b) Suction lines and systems must comply with the following requirements:
- 1) American Suction
 - A) ~~For all permit applications received As as~~ of September 1, 2010, every American suction piping line shall be equipped with interstitial monitoring sensors at all piping sumps, dispenser sumps and piping junction sumps that will immediately shut off the supply of product at the dispenser upon the detection of a release, except for USTs serving emergency power generators. Sensors for USTs serving emergency power generators shall trigger a local alarm upon the detection of a release. The automatic shutoff shall be deactivated in any UST serving emergency power generators where such function has been previously installed. All Testing of interstitial monitoring sensors shall be ~~tested~~ conducted annually pursuant to the requirements of Section 175.630(g). All interstitial monitoring sensors shall be inspected for operability at least once per month and a record of the inspection results generated.
 - B) All American suction lines shall be tested annually using positive pressure of at least 7 psi for 30 minutes, or, using a monthly monitoring method as approved by OSFM.
 - 2) European suction lines do not require line leak detection or a precision line test if they are designed and constructed to meet the following:
 - A) The below grade piping operates at less than atmospheric pressure;
 - B) The below grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;
 - C) Only one check valve is included in each suction line;
 - D) The check valve is located directly below and as close as practical to the suction pump; and
 - E) A method is provided that allows compliance with subsections (b)(2)(B), (C) and (D) to be readily determined as of the time of OSFM inspection.

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- 3) Suction systems that do not meet the requirements of subsections (b)(2)(A) through (E) shall be classified as American suction and subject to the requirements for American suction in subsection (b)(1). European suction piping meeting the requirements of subsections (b)(2)(A) through (E) remains subject to requirements for under-dispenser containment pursuant to Section 175.410.
- c) Any of the methods in Section 175.630(e) through (g) and (i) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances, as approved by OSFM. SIR is not acceptable as a form of line leak detection. Precision testing is not a stand-alone method for line leak detection.
- d) Existing interstitial monitoring systems and sensors shall be maintained and, beginning September 8, 2008, may not be removed irrespective of whether the leak detection is secondary or redundant to other forms of leak detection. If the interstitial monitoring is not functional or not operating properly it shall promptly be repaired or replaced and any necessary measures to prevent false positive and false negative readings shall be implemented.
- e) One copy of an independent third-party evaluation and its protocol for each piping release detection method shall be submitted to OSFM as part of the permit application process. Any deviation from the third-party evaluation shall be submitted to OSFM for approval with the permit application, including but not limited to an evaluation by a licensed professional engineer finding that the release detection system as installed meets the performance requirements of 40 CFR 280 and this Part and the performance claims established by the independent third-party evaluation and its protocol. See also Section 175.415 regarding compatibility with product stored.

(Source: Emergency amendment at 37 Ill. Reg. _____, effective _____, for a maximum of 150 days)