

EPA’s Office of Underground Storage Tanks developed this document to describe the significant differences between the 1988 federal underground storage tank (UST) regulations and EPA’s proposed changes, as well as provide additional information about the changes. See EPA’s website (www.epa.gov/oust/fedlaws/proposedregs.html) for the proposed federal UST regulations and additional information to help UST stakeholders understand the proposed changes.

This document provides information about EPA’s proposal to change the 1988 federal UST regulations. It is not a substitute for the information in 40 CFR parts 280 and 281 or EPA’s notice of proposed rulemaking published in the *Federal Register*.

Area	Current Requirement And Citation	Proposed Requirement, Implementation ¹ , And Preamble Location	Additional Information About The Proposed Change
Operator Training	None	<ul style="list-style-type: none"> • Owners and operators designate at least one individual for each of three classes of operators. Designated operators must be trained on minimum defined areas and may need to be retrained if the UST system is not in compliance. • Owners and operators retain a list of designated operators trained at each facility and proof of training or retraining. • EPA adds definitions for Class A operator, Class B operator, Class C operator, and training program. <p>Implementation: phased in over three years based on tank installation date</p> <p>[Section IV.A.1]</p>	The Energy Policy Act of 2005 (EPAct) required operator training in states that receive money from EPA. This proposed change will ensure that all operators across the country, including those in Indian country and in states without operator training requirements, are trained to prevent releases.
<ul style="list-style-type: none"> • What is meant by “phased in over three years based on tank installation date?” August 2012 was the original deadline given to states. • Sending operators back to training is an option in Iowa Operator Training regulations. 			

¹ Implementation is the time frame the regulated community has to meet the requirement after the effective date of the final UST regulation.

Area	Current Requirement And Citation	Proposed Requirement, Implementation ¹ , And Preamble Location	Additional Information About The Proposed Change
Secondary Containment	Secondary containment and interstitial monitoring for hazardous substance tanks only [§ 280.42]	<ul style="list-style-type: none"> • Owners and operators install secondary containment and interstitial monitoring for all (including petroleum) new and replaced tanks and piping (except safe suction piping and piping associated with field-constructed tanks and airport hydrant systems). Owners and operators must replace the entire piping run when 50 percent or more of piping, excluding connectors, is removed and other piping is installed. • Owners and operators install under-dispenser containment for all new dispenser systems. • EPA adds definitions for dispenser system, replaced, secondary containment, and under-dispenser containment. <p>Implementation: immediately</p> <p>[Section IV.A.2]</p>	EPA requires states to implement additional measures to protect groundwater as a condition of receiving money from EPA ² . EPA proposes to implement secondary containment and under-dispenser containment (UDC) to meet this provision. This proposed change will ensure secondary containment and UDC are required for all new and replaced UST systems across the country, including those in Indian country and in states without additional measures to protect groundwater requirements.
<ul style="list-style-type: none"> • What about distance from “Community Water Systems” for installing secondary containment? Is that left out of the proposed regulations? We agree it should be left out. • Iowa believes continuous electronic monitoring of the interstitial space should be required for newly installed secondary containment systems with pressurized delivery. Safer Suction piping should also be double wall. • Iowa agrees with the 50% or more of piping replacement requirement. 			

²EPA allows states the option of meeting the additional measures to protect groundwater requirement by either secondary containment and under-dispenser containment or evidence of financial responsibility and installer certification.

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<p>Operation And Maintenance (O&M)</p>	<p>Triennial cathodic protection testing; periodic internal lining inspections; annual line leak detector (LLD) testing; and release detection equipment operation and maintenance according to manufacturer's instructions</p> <p>[§ 280.31, §</p>	<ul style="list-style-type: none"> Walkthrough inspections - owners and operators conduct monthly walkthrough inspections which look at: spill prevention equipment; sumps and dispenser cabinets; monitoring/observation wells; cathodic protection equipment; and release detection equipment <p>Implementation: immediately</p> <p>[Section IV.B.1]</p>	<p>The 1988 UST regulations required equipment be in place to reduce and prevent releases to the environment. These proposed changes will ensure owners and operators maintain their equipment to ensure it is working properly and preventing releases.</p> <ul style="list-style-type: none"> Walkthrough inspections ensure owners are looking regularly at their equipment to catch problems early and prevent releases. Spill prevention equipment is required under the 1988 UST regulations, but testing is not required. Spill prevention
<p>Area</p>	<p>Current Requirement And Citation</p>	<p>Proposed Requirement, Implementation¹, And Preamble Location</p>	<p>Additional Information About The Proposed Change</p>
	<p>280.21(b)(1)(ii), § 280.44(a), and 280.40(a)(2)]</p>	<ul style="list-style-type: none"> Spill prevention equipment - owners and operators test annually for liquid tightness or use a double-walled spill bucket with continuous interstitial monitoring. <p>Implementation: within one year</p> <p>[Section IV.B.2]</p>	
		<ul style="list-style-type: none"> Overfill prevention equipment - owners and operators test every three years to ensure equipment is set to activate at the appropriate level in the tank and will activate when regulated substances reach that height. <p>Implementation: phased in over three years based on tank installation date</p> <p>[Section IV.B.3]</p> <ul style="list-style-type: none"> Secondary containment areas - owners and operators test every three years to ensure the interstitial area has integrity or use specific continuous monitoring methods. <p>Implementation: phased in over three years based on tank installation date</p>	<p>Equipment will eventually fail; testing will ensure the integrity of the spill bucket because it will catch small spills when the delivery hose is disconnected from the fill pipe.</p> <ul style="list-style-type: none"> Overfill equipment is required under the 1988 UST regulations, but does not have to be tested regularly. Overfill testing will ensure overfill equipment will activate properly and notify the delivery person that the tank is nearly full. Testing interstitial areas will ensure leaks will be caught before reaching the environment. Release detection equipment is required under the 1988 UST regulations, but does not have to be tested regularly. Testing release detection equipment will ensure the equipment is operating properly and will detect a release quickly.

		[Section IV.B.4]	
		<ul style="list-style-type: none"> • Release detection equipment (including LLDs) - owners and operators test annually to ensure equipment is operating properly. 	
		<p>Implementation: within one year</p>	
		[Section IV.B.5]	

- Iowa agrees in principle with the “Walkthrough inspections,” however, if one has continuous electronic monitoring of secondary containment sumps, is it necessary to inspect those sumps monthly? Electronic monitoring of sumps is an alternative to “walkthroughs.” We do not want to discourage continuous electronic monitoring. Uncontained sumps and sumps with no leak detection need monthly monitoring since no leak detection of these sumps is being performed now and the problem should have been addressed in the original regulations. Even with continuous electronic monitoring, “walkthroughs” are a very good idea. Anything that increases attention to potential problem areas is encouraged, but we are already doing that with continuous electronic monitoring. There is concern that some of the access lids are heavy and dangerous to attempt lifting for the C-store operator. Newer sump covers can also be difficult. Hanging hardware, UDCs, solenoids, meters, joints are all important and fairly accessible to inspect on a “walkthrough.” Iowa encourages owner/operators to inspect their systems in a walkthrough. STP sumps and spill buckets are also important to inspect, however, we recognize the potential hazard and difficulty. Currently Iowa inspects all 2700 sites biennially, and roughly 1700 (PMMIC insured sites) are inspected annually.
- Iowa agrees with annual tests of spill bucket tightness, although we inspect every two years and have found that sufficient. Secondary containment testing is already required in Iowa biennially. These tests can coincide with the biennial inspection and save the owner/operator mobilization costs.
- Iowa believes testing overfill prevention equipment every three years is too long. Two years is reasonable. Equipment should be tested whenever it is found to be tampered with, whether a VRS or overfill prevention.
- Continuous electronic monitoring of the interstitial space should be required for all new systems. Secondary containment systems must be inspected and monitored every two years in Iowa.
- Iowa agrees all ALLDs (ELLDs and MLLDs) need annual testing.

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Area	Current Requirement And Citation	Proposed Requirement, Implementation ¹ , And Preamble Location	Additional Information About The Proposed Change
Deferrals	UST systems storing fuel for use by emergency power generators deferred from release detection [§ 280.10(d)]	<ul style="list-style-type: none"> EPA removes deferral and requires owners and operators to perform release detection. <p>Implementation: within one year</p> <p>[Section IV.C.1]</p>	The 1988 UST regulations deferred emergency generator tanks because technology was not available to monitor remote sites. The technology is now available to monitor and detect releases. These systems have releases similar to other regulated UST systems and need to have release detection monitoring.
	Field-constructed tanks (FCT), airport hydrant systems (AHS) and wastewater treatment tank systems deferred from subparts B, C, D, E, G, and H [§ 280.10(c)(1), (4), and (5)]	<ul style="list-style-type: none"> EPA removes deferral and regulates FCT, AHS, and wastewater treatment tank systems. Owners and operators may use alternative release detection options for FCT and AHS systems. EPA continues to defer aboveground tanks associated with FCT and AHS. EPA defines airport hydrant fuel distribution system. <p>Implementation: three years for subparts B (except notification), C, and D (except periodic bulk piping pressure testing which has a phase in over seven years) and immediate for subparts E, G, H, and notification</p> <p>[Sections IV.C.2, 3, and 4]</p>	The 1988 UST regulations deferred wastewater treatment tanks because of uncertainty of the universe and the appropriateness of some release detection methods for these systems. EPA believes there are no active systems to which this regulatory requirement will apply. However, if any of these systems do exist, release detection and prevention technologies are available for these systems to prevent and quickly detect releases to the environment. The 1988 UST regulations deferred AHSs and FCTs because sufficient information and technology was not readily available for these unique systems. Technology is now available to monitor and detect releases at alternative leak rates and frequencies. These proposed changes will prevent and quickly detect releases from these systems.

- Iowa supports removing the deferral for emergency power generator tanks and requiring owners and operators to perform release detection. Under Iowa Secondary Containment requirements, new UST systems (installed on or after November 28, 2007), including emergency generator tanks, ipso facto, are required to conduct leak detection.
- Iowa believes the proposed regulations should address heating oil tanks greater than 1100 gallons, i.e., they should be regulated and required to be permanently closed. Unprotected heating oil tanks greater than 20 years old should also be required to permanently close. They are still a significant threat to groundwater protection. Many states cannot do anything about these tanks without federal rules.
- The statement “Technology is now available to monitor and detect releases at alternative leak rates and frequencies” should be acknowledged in regulations for all tanks. In other words, if an approved method can find a leak at a rate smaller than what is required, e.g., 0.1 or 0.2 gph, then it should be declared a leak through a valid method and further

investigation/repairs are required. A 0.1 gph is too large, when 0.005 gph leaks can be detected. EPA does not have to require a 0.005 gph leak rate, but it should be acknowledged as a “valid” leak.

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Flow Restrictors In Vent Lines	USTs may use flow restrictors in vent lines (also called ball float valves) to meet the overfill prevention equipment requirement. [§ 280.20(c)(ii)]	<ul style="list-style-type: none"> EPA eliminates flow restrictors in vent lines as an option for owners and operators to meet the overfill prevention equipment requirement for newly installed UST systems and when flow restrictors in vent lines are replaced. <p>Implementation: immediately</p> <p>[Section IV.D.1]</p>	This technology has several inherent weaknesses and can result in tanks being over pressurized. This proposed change no longer allows flow restrictors in vent lines for new and replaced systems. Owners and operators must use one of the other overfill prevention methods listed in 40 CFR part 280.
<ul style="list-style-type: none"> Iowa supports the ban on flow restrictors for newly installed tanks. Iowa also prohibits the use of flow restrictors per PEI PR100. 			

Area	Current Requirement And Citation	Proposed Requirement, Implementation ¹ , And Preamble Location	Additional Information About The Proposed Change
Internal Lining	<p>USTs using internal lining as the sole method of corrosion protection can add another internal lining, cathodic protection, or both if the internal lining fails the periodic inspection and cannot be repaired in accordance with a code of practice.</p> <p>[§ 280.21(b)]</p>	<ul style="list-style-type: none"> • Owners and operators permanently close tanks using internal lining as the sole method of corrosion protection, if the internal lining fails the periodic inspection and cannot be repaired according to a code of practice. <p>Implementation: immediately</p> <p>[Section IV.D.2]</p>	<p>The 1988 UST regulations allowed lining as an upgrade option to extend the life of some tanks. While linings extended the life of many tanks, this is not a permanent solution. As the tank linings fail, these older tanks must be taken out of service to prevent releases to the environment.</p>
Notification	<p>Notify the state or local agency within 30 days of bringing an UST system into use.</p> <p>[§ 280.22]</p>	<ul style="list-style-type: none"> • Owners and operators notify the implementing agency rather than the state or local agency. • Owners and operators notify the implementing agency within 30 days of UST system ownership change. • Within 30 days of the effective date of the final UST regulation, owners and operators submit a one-time notification for previously deferred UST systems EPA regulates. • EPA updates the notification form to reflect changes in the proposed regulations. <p>Implementation: immediately</p> <p>[Section IV.D.3]</p>	<p>This change provides implementing agencies with important information about regulated UST systems. Currently owners are required to notify state and local agencies from an outdated list in the 1988 UST regulation. In addition, owners are not required to notify EPA about USTs under our jurisdiction. This change will help implementing agencies carry out the program effectively.</p>

- Iowa believes that internally lined tanks that fail a periodic inspection should be permanently closed if perforations are discovered. Lining may be repaired if sufficient metal (integrity) remains (API 1631). The entire lining should be removed, the tank sandblasted, and taken down to white steel. In other words, repairs can be made only if the entire lining is replaced. If internal lining is the sole method of corrosion protection and that lining fails, they should be permanently closed. In most cases, the lining in older tanks covers perforations.

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Compatibility	<p>Owners and operators must use UST systems made of or lined with materials that are compatible with the substance stored in the UST system. Two codes of practice are referenced in a note.</p> <p>[§ 280.32]</p>	<ul style="list-style-type: none"> • Owners and operators demonstrate compatibility for UST systems storing greater than 10 percent ethanol or greater than 20 percent biodiesel, or any other regulated substance the implementing agency identifies, by one of these methods: listing by a nationally recognized independent testing laboratory; equipment or component manufacturer approval; or another method the implementing agency determines to be no less protective of human health and the environment than the other methods. • Owners and operators maintain compatibility records for the life of the equipment or component for all new or replaced equipment and for UST systems storing greater than 10 percent ethanol or greater than 20 percent biodiesel. • EPA removes references to two codes of practice. • EPA revises definitions of motor fuel and regulated substance. <p>Implementation: immediately</p> <p>[Section IV.D.4]</p>	<p>The 1988 UST regulations require UST systems to be compatible with the material stored in them. This proposed change does not alter that, but rather helps owners demonstrate compatibility with their system. As newer fuels enter the market place, it is even more important for owners and operators to clearly understand how to demonstrate compatibility with these fuels and ensure there are no releases to the environment due to stored fuels being incompatible with UST systems.</p>
<ul style="list-style-type: none"> • Iowa agrees that owners and operators need guidance in determining compatibility of equipment for blended fuels. States should also operate in this area with uniform standards. It is our experience that even with manufacturer approval, problems can occur. The important thing is we now have guidance for demonstrating compatibility. Iowa would emphasize that the secondary wall for tanks and piping must also be compatible. 			

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Repairs	Definition of repair links a repair to a release; testing following a repair applies only to the tank, piping, and cathodic protection system. [§ 280.12 and § 280.33]	<ul style="list-style-type: none"> EPA revises definition to remove the link that a repair must be associated with a release and adds examples of other UST system components that can be repaired. Owners and operators test within 30 days after a repair to spill or overfill equipment and secondary containment areas. <p>Implementation: immediately</p> <p>[Section IV.D.5]</p>	This proposed change provides clarity that fixing parts of the UST system not linked to a release are also repairs, therefore testing following these activities is necessary.
<p>• Iowa agrees with the expanded definition of repair and the addition of testing.</p>			
Vapor And Groundwater Monitoring	Vapor and groundwater monitoring allowed as monthly methods of release detection. [§ 280.43(e) and (f)]	<ul style="list-style-type: none"> EPA phases out vapor and groundwater monitoring as release detection options for owners and operators. <p>Implementation: within five years</p> <p>[Section IV.D.6]</p>	These release detection methods are external to the tank, which means a release can significantly affect the environment before it is detected. Owners and operators must use one of the other more protective release detection options listed in 40 CFR part 280.
<p>• Iowa agrees with the phasing out of vapor and groundwater monitoring as it has been practiced since the current regulations went into effect. As they have been practiced, these methods have been unreliable for detecting a release within 24 hours. However, Iowa does not want to rule out the effectiveness of more accurate vapor monitoring such as practiced by Leak Detection Technologies and other vendors who are able to detect vapor releases quickly and accurately. These methods feature an array of vapor monitoring wells such that the entire UST system is monitored for releases smaller than 0.1 gph. When installed during construction of the UST system, they can detect vapor releases before the system is activated. A three year implementation is preferred.</p>			

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Interstitial Monitoring Results	Reporting suspected releases and system testing associated with release investigation and confirmation. [§ 280.50 and § 280.52]	<ul style="list-style-type: none"> • EPA adds interstitial monitoring alarms as an example of an unusual operating condition under release reporting. • EPA adds interstitial integrity testing for secondarily contained tanks and piping using interstitial monitoring for the system test under release investigation and confirmation. • EPA adds closure as an option if a system test confirms a leak. <p>Implementation: immediately</p> <p>[Section IV.D.7]</p>	As interstitial monitoring becomes used more widely, it is important to ensure the regulations are clear on all aspects of its use. This proposed change provides clarity about reporting, response, and testing for interstitial alarms. It also clarifies that closure is allowed if a leak is confirmed.
<p style="color: red;">• Iowa agrees that adding interstitial monitoring to unusual operating conditions is helpful and necessary. Testing of both primary and secondary walls (the interstice) are important in locating or confirming a suspected release. Identifying permanent closure as an option to a confirmed release is helpful.</p>			
Newer Technologies	Includes technologies from 1988 and before. [§ 280.20 and § 280.43]	<ul style="list-style-type: none"> • EPA adds newer technologies: clad and jacketed tanks, noncorrodible piping, continuous in-tank leak detection, and statistical inventory reconciliation. <p>[Section IV E.1]</p>	This proposed change updates the 1988 UST regulations to include current technologies.
<p style="color: red;">• Iowa agrees with the inclusion of technological updates/current technologies. Iowa encourages EPA to consider adding leak detection technology that finds leaks smaller than what is currently required, i.e., 0.1 gph. We still use the same leak rate 23 years after implementing UST rules even though the technology has improved, is available, and effective. If an owner/operator chooses to use approved leak technology with a smaller leak rate, e.g., 0.005 gph, language should be added that validates and identifies the detection as a leak. Iowa believes failing to address smaller and more accurate methods of leak detection is a shortcoming of the regulations.</p>			
Codes Of Practice	Includes codes of practice from 1988 and before.	<ul style="list-style-type: none"> • EPA adds newer codes of practices, updates titles of codes of practices, and removes codes of practice that are not applicable or no longer exist. 	This proposed change updates the 1988 UST regulations to include current codes of practice.

	[throughout 40 CFR part 280]	[Section IV E.2]	
<ul style="list-style-type: none"> It is important to add codes of practice/references that are helpful to the owner/operator as well as the regulator or UST professional, such as PEI RP 900. 			
Area	Current Requirement And Citation	Proposed Requirement, Implementation ¹ , And Preamble Location	Additional Information About The Proposed Change
Upgrade Requirements	Includes options and requirements for upgrading UST systems with spill, overfill, corrosion protection, release detection, and financial responsibility. [§ 280.21, § 280.40, § 280.41, § 280.42, and § 280.91]	<ul style="list-style-type: none"> EPA removes references to 1993 through 1998 upgrades and phase in schedules associated with the original upgrade deadlines. [Section IV E.3]	The upgrade deadlines passed more than ten years ago and no longer need to be included as part of the requirements. This proposed change removes references to this outdated information.
Editorial And Technical Corrections	Not applicable	<ul style="list-style-type: none"> EPA corrects spelling, numbering, and other editorial errors. EPA adds guidance and interpretations we developed and implemented since 1988. [Section IV E.4]	This proposed change corrects previous errors in the 1988 UST regulations.
State Program Approval Requirements	Includes criteria for states choosing to obtain state program approval (SPA). [40 CFR part 281]	<ul style="list-style-type: none"> EPA updates SPA requirements to address proposed changes to 40 CFR part 280 and implement delivery prohibition, operator training, and additional measures to protect groundwater requirements contained in the Energy Policy Act of 2005. Implementation: States with program approval have 3 years to submit a revised SPA package. [Section V]	This proposed change ensures states will also update their programs with the increased environmental protections. It provides consistency between federal and state UST regulations.
<ul style="list-style-type: none"> Iowa adopted rules for and implemented all provisions of the 2005 Energy Policy Act. These provisions (at least delivery prohibition, inspections and secondary containment) have been effective and useful tools for enforcement and prevention. The deadline for operator training was December 2011. It is too early to tell or measure its effectiveness in preventing leaks/releases, but it is a valuable provision/improvement. 			

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