

The Energy Policy Act of 2005 (E-Pact) established new statutory requirements specifically designed to improve the environmental management of federal facility underground storage tanks (USTs). Executive Order 13423 **Strengthening Federal Environmental, Energy, and Transportation Management**, requires that federal agencies implement environmental management systems (EMS) at all appropriate organizational levels. This document provides guidance and examples of how efforts to address Underground Storage Tank regulatory requirements and implement best management practices for UST operations can work in concert with Environmental Management System implementation.

March 27, 2008

Every effort will be made to keep the materials and web links in this document current and accurate. Should you find an inactive link or what you believe is incorrect information, please provide notice of that situation to the “feedback” page at [FedCenter](#).

<b>EMS Element</b>	<b>EMS Element</b> Relevance to Underground Storage Tank (UST) Management	<b>Actions and Examples/Resources</b>
<p><b>Environmental Policy</b> The organization states its commitment to environmental compliance, environmental protection, and continual improvement within the scope of the organization’s activities and products and services covered by its EMS.</p>	<p><b>Environmental Policy</b> The environmental policy statement often outlines general commitments to environmental stewardship. It does not necessarily refer to a specific aspect such as USTs. However, if UST management is a primary focus of the organization’s/facility’s mission or operations, then specific reference to UST management may be appropriate.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Develop an environmental policy that either specifically addresses UST impacts or incorporates UST issues in broader policy statements (e.g., compliance with regulations, training and awareness, spill/release minimization).</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">EPA policy guidance</a> pertaining to USTs.</li> </ul>

	<p>The policy statement must be made available to employees as well as those working for the organization, such as contractors.</p>	<ul style="list-style-type: none"> <li>• The Department of Commerce’s <a href="#">UST-specific policies</a> (see page 48).</li> <li>• Public Entity EMS Resource (PEER) Center EMS case studies in the transportation sector: <ul style="list-style-type: none"> <li>○ <a href="#">Snohomish County (WA) Community Transit</a> (see page 29)</li> <li>○ <a href="#">Texas Department of Transportation</a></li> <li>○ <a href="#">Massachusetts Highway Department</a></li> </ul> </li> </ul>
<p><b>Environmental Aspects</b> An EMS includes procedure(s) to identify, and keep up-to-date environmental aspects and impacts of activities and products and services it can control and influence, including ongoing and new projects. Significant aspects must be taken into account in establishing, implementing, and maintaining the EMS.</p>	<p><b>Environmental Aspects</b> Environmental aspects should include obvious regulatory focal points such as leaks and corrosion protection but also those associated with human errors that could occur during product loading and vehicle filling activities.</p> <p>Any aspects associated with regulated activities or products are generally considered <i>significant</i>.</p> <p>Participation of all parties involved in UST management is critical to developing and reviewing a comprehensive list of environmental aspects.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Include UST elements in a comprehensive facility-wide list of activities, aspects, and impacts.</li> <li>• Involve all relevant personnel, including management, fuel truck delivery drivers, vehicle operators, and staff responsible for monitoring compliance with UST regulations. Consider both routine operations and emergency situations.</li> <li>• Use the aspect/impact identification process to identify critical UST impacts. Consider the proximity of USTs and delivery/filling operations to sensitive areas such as wetlands.</li> <li>• Determine ranking criteria and identify UST aspects that qualify as significant.</li> <li>• Aspects subject to federal, state, and local regulations are typically considered significant.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Common UST-related activities, aspects, and impacts:</li> </ul>

		<ul style="list-style-type: none"> <li>○ Activity—UST deliveries. Aspect—hazardous/toxic material releases. Impact—Land and water contamination.</li> <li>● <a href="#">Generic aspects and impacts by facility types, activity, and task</a> (see pages 65–66 [heating oil storage] and 117–118 [USTs]. Other relevant pages include 28, 118–119 [vehicle maintenance/automotive service]; 90 [oil storage]; 77 [marine fueling]; and 63 [fuel dispensing]).</li> <li>● <a href="#">UST environmental aspects</a> identified by DOE’s Lawrence Livermore National Laboratory (see section 2.0).</li> <li>● EPA’s Region 9 <a href="#">Underground Storage Tanks, Education and Outreach</a> for preventing leaks and spills at service stations.</li> <li>● EPA’s “<a href="#">Model Underground Storage Tank Environmental Results Program Workbook (Based on the Federal Regulations)</a>” comprehensively discusses regulatory focal points.</li> </ul>
<p><b>Legal and Other Requirements</b> An EMS includes procedure(s) to identify and have access to legal and other requirements related to an organization’s environmental aspects.</p>	<p><b>Legal and Other Requirements</b> An EMS procedure for identifying and making available relevant legal and other requirements serves to integrate in the EMS all federal, state, and local regulations related to UST management, as well as applicable Executive Order mandates and additional agency commitments.</p> <p>Identifying and updating requirements will</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>● Identify all applicable federal, state, and local UST regulations and other agency commitments or goals that apply to UST management. Determine whether surrounding areas are designated as sensitive environments and subject to more stringent local limits.</li> <li>● Address <i>how</i> UST regulations and goals are applicable and what actions are required to</li> </ul>

	<p>help ensure that all regulatory and voluntary UST management requirements and commitments are addressed across the EMS (including as factors determining significance of environmental aspects, and as operational controls to ensure compliance) and that the requirements can be effectively accessed by and communicated to whoever might need them.</p>	<p>meet regulatory compliance and other commitments. Include information on relevant permitting authorities and reporting requirements.</p> <ul style="list-style-type: none"> <li>• Identify applicable waivers and exemptions. Specify how/when they are applicable.</li> <li>• Reference any applicable regulations for UST construction or closure.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Key environmental regulations and statutes applicable to UST management include: <ul style="list-style-type: none"> <li>○ <a href="#">40 CFR 280</a>—requirements for owners and operators of USTs</li> <li>○ <a href="#">Clean Water Act</a>—requirements when USTs exceed the threshold and are not managed under 40 CFR 280</li> <li>○ <a href="#">40 CFR 302</a>—<i>Comprehensive Environmental Response, Compensation, and Liability Act</i></li> <li>○ <a href="#">Energy Policy Act of 2005 (EPA Act)</a>—expands eligible uses of the Leaking Underground Storage Tank (LUST) Trust Fund and includes provisions regarding inspections, operator training, delivery prohibition, secondary containment and financial responsibility, and cleanup of releases that contain oxygenated fuel additives</li> <li>○ <a href="#">Subtitle I of RCRA</a> – Regulation of Underground Storage Tanks.</li> </ul> </li> <li>• EPA’s <a href="#">Regulations and Standards Related</a></li> </ul>
--	--	---

		<p><a href="#">to Underground Storage Tanks</a> provides links to regulations and standards applicable to USTs.</p> <ul style="list-style-type: none"><li>• EPA’s <a href="#">“Underground Storage Tank Compendium”</a> is designed to assist EPA enforcement personnel in evaluating and pursuing UST enforcement actions.</li><li>• EPA’s <a href="#">“Underground Storage Tank Technical Compendium”</a> provides interpretations and guidance letters sent out by the Office of Underground Storage Tanks.</li><li>• EPA’s <a href="#">State, Local, and Tribal Underground Storage Tank Programs</a> provides links to state, local, and tribal UST programs.</li><li>• EPA’s <a href="#">Where You Live</a> provides links to Regional EPA and state sites for the latest information on the status of the UST programs in the states and regions.</li><li>• EPA’s Region 9 <a href="#">Underground Storage Tanks, Education and Outreach</a> provides a compliance checklist for USTs (see page 4).</li><li>• EPA’s <a href="#">Audit Policy</a> provides several major incentives for regulated entities to voluntarily come into compliance with environmental laws and regulations.</li><li>• EPA’s <a href="#">“Model Underground Storage Tank Environmental Results Program Workbook (Based on the Federal Regulations)”</a> provides regulatory requirements, best management practices, and compliance</li></ul>
--	--	--

<p><b>Objectives, Targets, and Environmental Management Programs (EMPs)</b>  Objectives and targets are established to address significant aspects and legal requirements, unless they can be fully addressed with operational controls, and lead to continual improvement.  EMPs identify the means and responsibilities for achieving objectives and targets. EMPs are developed for each objective, describing specific tasks, milestones, responsible parties, and measurement parameters.</p>	<p><b>Objectives, Targets, and Environmental Management Programs (EMPs)</b>  Facility compliance with UST requirements is generally emphasized through a <i>policy commitment</i>, but including it as an <i>objective</i> can help reinforce its importance.</p> <p>The facility should first focus on objectives and targets that will help meet zero release requirements. It should then consider goals that can further reduce pollution by preventing leaks, spills, or product delivery errors.</p> <p>Management, UST operators, and contractor employees should be included in establishing objectives and targets. Upper management, line managers, and employees who are specifically tasked to meet an objective or implement an EMP must be aware of their responsibility, have agreed to the task, and have adequate resources to carry out those responsibilities. Tasks must be described in employee performance appraisals/workplans.</p>	<p>checklists for USTs (see page 19).</p> <p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Gather baseline data such as frequency of and extent of leaks, releases, operator error, and other applicable metrics. Gather input from all appropriate personnel (including management, operators, and contractors) to develop realistic objectives and targets.</li> <li>• Focus on objectives and targets that will help meet zero release requirements. Consider goals that can achieve further pollutant prevention (e.g., eliminating spills or product delivery errors).</li> <li>• Establish EMPs that either focus on or incorporate UST management goals. Evaluate and integrate processes and procedures already in place. Update and supplement existing programs to satisfy the requirements of the EMS.</li> <li>• Consider approaches that include improved training, increased equipment inspections, and revisions to monitoring methods or schedules.</li> <li>• Describe how objectives and targets will be achieved, monitored, and measured. These objectives and targets should be reviewed periodically (typically each year) and whenever there is a change that could affect UST operations, to determine whether changes are necessary and appropriate.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• <b>EMP</b> for UST permit requirements:</li> </ul>
--	---	---

		<ul style="list-style-type: none"> <li>○ <b>Objective</b>—provide timely compliance monitoring reports</li> <li>○ <b>Target</b>—meet 100 percent of requirements (e.g., monthly tank and piping release monitoring reports, corrosion protection recordkeeping requirements and routine inspections) in advance of deadlines</li> <li>● <b>EMP</b> for ground/groundwater contamination: <ul style="list-style-type: none"> <li>○ <b>Objective</b>—eliminate potential for ground/groundwater contamination from USTs</li> <li>○ <b>Target 1</b>—train all appropriate personnel on monitoring system</li> <li>○ <b>Target 2</b>—reduce number of spills to zero</li> </ul> </li> <li>● <a href="#">UST management program</a> at National Aeronautics and Space Administration (NASA)’s Glenn Research Center (Cleveland, OH).</li> <li>● <a href="#">UST management program</a> at DOE’s Lawrence Berkeley National Laboratory (Berkeley, CA).</li> <li>● DOE’s EPAAct <a href="#">UST compliance strategy report</a>.</li> <li>● Chapter 2 of EPA’s “<a href="#">Model Underground Storage Tank Environmental Results Program Workbook (Based on the Federal Regulations)</a>” discusses UST management requirements under the UST Environmental Results Program (see page 3).</li> </ul>
<b>Resources, Roles, Responsibility, and</b>	<b>Resources, Roles, Responsibility, and</b>	<b>Actions</b>

<p><b>Authority</b>  Management must ensure resources are available to establish, implement, maintain and improve the EMS. Roles, responsibilities and authorities must be defined, documented and communicated.</p>	<p><b>Authority</b>  The EMS should specify key roles and responsibilities for UST operations and identify and make available resources for meeting program objectives and targets.</p> <p>Individuals or groups (such as facility-wide environmental services) with specific or critical UST responsibilities should be identified. Those responsibilities should be described in detail and communicated to all facility staff.</p> <p>Resources available to support the EMS must be described and be adequate to support the EMS goals.</p>	<ul style="list-style-type: none"> <li>• Identify personnel with responsibilities relating to UST management and assign appropriate EMS roles (program lead, monitor, etc.). Include contractors whose work has any relation to UST aspects. Ensure that designated leads are familiar with UST operations. Assign specialized responsibilities to additional personnel as necessary.</li> <li>• Evaluate resources available or needed to achieve EMS objectives and targets and ensure that those resources are appropriately allocated.</li> <li>• Consider incorporating penalties/rewards to promote effective UST management.</li> <li>• Ensure recognition of roles and responsibilities from upper management and designate staff responsible for reporting on program progress and success/failure.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Common roles for UST managers: <ul style="list-style-type: none"> <li>○ Training new operators</li> <li>○ Developing monitoring schedules</li> <li>○ Analyzing the root cause of noncompliance issues</li> <li>○ Presenting progress to the EMS coordinator and/or upper management</li> </ul> </li> <li>• Common roles for UST operators: <ul style="list-style-type: none"> <li>○ Conducting routine equipment inspections (including monitoring equipment)</li> <li>○ Notifying management of any</li> </ul> </li> </ul>
--	---	---

		<p>equipment malfunctions or operator errors</p> <ul style="list-style-type: none"> <li>○ Completing and maintaining required regulatory paperwork</li> <li>● <a href="#">UST roles and responsibilities</a> at NASA’s Glenn Research Center (Cleveland, OH) (see page 2).</li> <li>● <a href="#">UST roles and responsibilities</a> at DOE’s Lawrence Livermore National Laboratory (Berkeley, CA) (see section 5.0).</li> <li>● <a href="#">Environmental Handbook</a> for the New York State Department of Transportation (see page 38 for roles and responsibilities relating to UST management).</li> </ul>
<p><b>Competence, Training, and Awareness</b>  Person(s) performing tasks for the organization or on its behalf that have the potential for significant impacts must be competent as a result of education, training, or experience.</p>	<p><b>Competence, Training, and Awareness</b>  UST management topics should be incorporated into routine EMS awareness and refresher training provided to all employees, and to others whose work may relate to UST management, such as contractors. Ensure that those trained understand their role, however limited (e.g., reporting leaks).</p> <p>Competence training is required for anyone responsible for activities or operations directly related to UST operation and maintenance. Records of training must be kept.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>● Identify training needs for employees responsible for UST management or whose work interacts with UST operations. Provide the training required to ensure regulatory compliance as well as additional training to ensure competency with emergency procedures and operations and maintenance requirements.</li> <li>● Provide appropriate awareness and, if necessary, competence training to contractors, vendors, or visitors, particularly if they will be frequently on site or engaged in activities related to USTs.</li> <li>● Incorporate UST management topics into general EMS training requirements to ensure broad awareness of UST impacts and aspects. Discuss causes and potential</li> </ul>

environmental impacts of USTs, with reference to the individual's job function.

**Examples/Resources**

- The New England Interstate Water Pollution Control Commission's "[Underground Storage Tank: Web-Based Training](#)."
- DOE's "[UST Leak Detection Workshop](#)."
- EPA National Enforcement Training Institute's "[Introduction to the Underground Storage Tanks \(UST\) Program and Basic UST Inspector Training Courses](#)."
- EPA's "[Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists](#)" provides guidance for operating and maintaining UST systems.
- EPA's "[Model Underground Storage Tank Environmental Results Program Workbook \(Based on the Federal Regulations\)](#)" provides regulatory requirements, best management practices, and compliance checklists for USTs. Chapter 3 (see page 5) provides a hypothetical case study to assist personnel in completing compliance checklists.
- EPA's Region 9 [Underground Storage Tanks, Education and Outreach](#) provides a compliance checklist for preventing leaks and spills at service stations.
- EPA's "[Automatic Tank Gauging Systems](#)

		<p><a href="#">for Release Detection: Reference Manual for Underground Storage Tank Inspectors</a>” provides guidance on evaluating how well UST owners and operators are using their automatic tank gauging systems.</p> <ul style="list-style-type: none"> <li>• EPA’s <a href="#">“UST Systems: Inspecting and Maintaining Sumps and Spill Buckets— Practical Help and Checklist”</a> provides guidance for operating and maintaining UST systems.</li> <li>• EPA’s <a href="#">“Underground Storage Tank Technical Compendium”</a> provides interpretations and guidance letters sent out by the Office of Underground Storage Tanks.</li> <li>• EPA’s <a href="#">Frequently Asked Questions About USTs</a> answers questions concerning UST systems.</li> </ul>
<p><b>Communication</b>  Procedures are established in an EMS for communicating internally and documenting and responding to relevant external communications.  An organization has discretion about communicating externally on significant environmental aspects; however, Federal agencies are in a special position to emphasize the importance of ongoing communication and cooperation with the public and interested parties.</p>	<p><b>Communication</b>  Where appropriate, ensure UST operation are included in established EMS procedures for internal/external communication.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Maintain up-to-date contact information for appropriate staff and contractors. Develop clear lines of communication among key personnel involved in UST management and operations.</li> <li>• Consider developing a “frequently asked questions” (FAQ) document to educate facility personnel on UST management, and include the FAQ on an EMS Web site.</li> <li>• Share successes, milestones, and lessons learned in the interest of continuous improvement and for the benefit of future projects and other facilities.</li> <li>• Consider communicating proactively with</li> </ul>

		<p>the community or other water quality stakeholders who would have an interest in the measures taken to minimize the environmental impacts of the facility UST operations.</p> <ul style="list-style-type: none"><li>• Make use of existing networking opportunities to exchange UST/EMS information with other facilities that have developed their own EMSs.</li></ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"><li>• Strong communication often helps identify critical areas of UST noncompliance or nonconformity.</li><li>• DOE’s Sandia National Laboratory (Livermore, CA) includes UST management issues in its <a href="#">annual site environmental report</a>, noting any notice of violations and corrective actions (see page 26).</li><li>• <a href="#">EMS guidance</a> at NASA’s Goddard Space Flight Center (Greenbelt, MD) notes that when communicating legal requirements facilities should recognize that “knowing the correct UST monitoring frequency and tasks as part of an overall operating procedure for a tank farm, is more important for the day to day operations staff, than being able to identify the tank regulations and quote them. It is beneficial to be aware of what operating procedural components are driven by the tank</li></ul>
--	--	---

		<p>regulations but not what those detailed regulations are. If end users ever needed that level of detail, they could consult with the environmental office.”</p> <ul style="list-style-type: none"> <li>• EPA’s <a href="#">Frequently Asked Questions About USTs</a> answers questions concerning UST systems.</li> </ul>
<p><b>Documentation/Document Control</b> Documentation for the EMS must include documents and records necessary for planning, operation and control of processes related to significant environmental aspects.</p> <p>Documents required by the EMS must be controlled using procedures to, among other things, approve documents for adequacy and update and re-approve as necessary.</p>	<p><b>Documentation/Document Control</b> A conforming EMS outlines documentation requirements and document control procedures applying to all UST management documents that relate to the facility’s environmental performance, including:</p> <ul style="list-style-type: none"> <li>◆ Permit applications and permit documents.</li> <li>◆ Notification forms.</li> <li>◆ Closure forms.</li> <li>◆ EMPs.</li> <li>◆ Operational controls.</li> <li>◆ Monitoring and reporting forms.</li> <li>◆ Training records.</li> </ul>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Document and maintain updated versions of all programs and procedures pertaining to UST management.</li> <li>• Typical document control involves protocols for specifying dates, specifying revision numbers, and identifying staff authorized to make changes to documents. Documents should also identify those who should be informed when changes are made.</li> <li>• Establish a procedure to follow when revising EMS documents to ensure that only current versions of documents are in use and out-of-date versions are so marked and removed from use.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• The USGS <a href="#">environmental management manual for USTs</a> includes specific requirements for UST-related documents.</li> <li>• EPA’s “<a href="#">Model Underground Storage Tank Environmental Results Program Workbook (Based on the Federal Regulations)</a>” provides templates for required UST management documentation. The</li> </ul>

		<p>appendices include templates for documents such as “Model Certification of Compliance Form,” “Model Return to Compliance Plan Form,” and “Sample Impressed Current 60 Day Inspection Form.” Chapter 4 also contains compliance monitoring checklists.</p> <ul style="list-style-type: none"> <li>• EPA’s <a href="#">Where You Live</a> provides links to Regional EPA and state sites where UST operators can obtain state forms such as notification and closure forms and permit applications.</li> <li>• EPA’s “<a href="#">Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists</a>” provides compliance monitoring checklists.</li> </ul>
<p><b>Operational Control</b>  In an EMS, an “operational control” is a procedure associated with an operation that is an identified significant environmental aspect. Procedures are established to ensure operations related to significant aspects do not deviate from environmental policy or objectives and targets.  Operational controls are process controls necessary for ensuring the system functions as intended. Procedures are required for any operation when their absence can lead to a deviation from EMS requirements.</p>	<p><b>Operational Control</b>  Develop operational controls (or document existing controls and ensure their linkage to significant aspects) that address the potential adverse environmental impacts from UST operations. Operational controls may also be needed to ensure that the facility meets objectives related to compliance and other requirements the organization has agreed to .  Existing program policies, procedures, plans, and guidance can serve as controls if they designate authority/responsibility and describe necessary steps to maintain operational control over the environmental aspects associated with USTs.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Begin by reviewing and compiling all existing operational instructions for operating, monitoring, and closing USTs.</li> <li>• Address controls needed to guide services provided by contractors and suppliers. Introduce and enforce such controls by including them in contract language.</li> <li>• Operational controls may also address employee training requirements, internal audits of UST management procedures, and any other practices that support the organization’s environmental policy and enable it to comply with applicable legal and other requirements.</li> </ul> <p>Actions to also consider include improved</p>

		<p>training, increased equipment inspections, and revisions to monitoring methods or schedules.</p> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Operational controls often address some of the following areas relating to UST management: <ul style="list-style-type: none"> <li>○ Employee training requirements</li> <li>○ Instructions for inspecting the integrity of tanks and related infrastructure</li> <li>○ Instructions for operating and maintaining leak and corrosion protection devices and monitors</li> <li>○ Instructions for filling of tanks</li> <li>○ Instructions for removing tanks from operation either temporarily or for closure</li> <li>○ General UST monitoring and reporting</li> </ul> </li> <li>• DOC's <a href="#">UST operational controls</a> (see page 50).</li> </ul>
<p><b>Emergency Preparedness and Response</b> Procedures are required for identifying potential emergencies and accidents and for preventing adverse environmental impacts from those emergencies and accidents.</p>	<p><b>Emergency Preparedness and Response</b> An EMS ensures that facilities to identify, plan for, and respond to any range of potential UST emergencies, whether such plans/responses are required by law or are otherwise necessary to protect employee health and safety and the local community and environment.</p> <p>Well-designed, well-executed UST control measures can protect against environmental impacts in the event of an emergency,</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Evaluate UST management practices in the context of emergencies. Implement additional controls and procedures as necessary.</li> <li>• Satisfy any applicable emergency planning requirements, such as spill release notifications or spill contingency plans.</li> <li>• Maintain necessary emergency response equipment to contain pollutants in the event of a materials spill or loss of product from a tank.</li> </ul>

	<p>including spills and leaks.</p> <p>Many facilities managing USTs are subject to CERCLA release notification and Community Right to Know requirements.</p> <p>Response plans should be periodically reviewed and, as appropriate, revised.</p>	<ul style="list-style-type: none"> <li>• Ensure that personnel are aware of emergency procedures and applicable CERCLA release notification and Community Right to Know requirements.</li> <li>• Discuss how well-designed, well-executed UST control measures can protect against environmental impacts in the event of an emergency.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Massachusetts <a href="#">Leaking Underground Storage Tank Release Prevention Program</a>.</li> <li>• EPA’s Office of Emergency Management guidance on <a href="#">chemical emergency preparedness, prevention, and response</a>.</li> <li>• EPA’s “<a href="#">Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists</a>” provides guidance on dealing with suspected or confirmed releases (see section 3).</li> <li>• EPA’s “<a href="#">Model Underground Storage Tank Environmental Results Program Workbook (Based on the Federal Regulations)</a>” provides guidance on dealing with suspected or confirmed releases (see chapter 4).</li> </ul>
<p><b>Monitoring and Measurement</b></p> <p>An EMS specifies procedures to monitor and measure key characteristics of its operations that can have significant environmental impacts. These include monitoring of performance, operational controls, and conformance with objectives and targets</p>	<p><b>Monitoring and Measurement</b></p> <p>A conforming EMS includes a monitoring and measurement program for frequently measuring critical control parameters, assessing facility compliance, and tracking progress toward objectives and targets.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Identify what is currently monitored and measured. Consider expanding on existing UST monitoring and measurement reporting (e.g., monthly release detection monitoring). Determine whether additional monitoring would help the facility meet</li> </ul>

	<p>The program should begin with existing UST monitoring and measurement reporting. At a minimum, the plan should cover all required monitoring (e.g., monthly release detection monitoring). It can then identify additional monitoring that would help the facility meet targets.</p>	<p>targets.</p> <ul style="list-style-type: none"><li>• Assign and communicate monitoring/measurement responsibilities and data collection/storage protocol. Ensure that permit monitoring requirements are met.</li><li>• Develop operational controls to ensure that all monitoring equipment is calibrated and properly maintained.</li></ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"><li>• EPA’s <a href="#">“Automatic Tank Gauging Systems for Release Detection: Reference Manual for Underground Storage Tank Inspectors”</a> provides guidance on evaluating how well UST owners and operators are using their automatic tank gauging systems.</li><li>• EPA’s <a href="#">“Straight Talk on Tanks: Leak Detection Methods for Petroleum Underground Storage Tanks and Piping”</a> provides guidance on leak detection methods for UST systems.</li><li>• EPA’s <a href="#">“Manual Tank Gauging for Small Underground Storage Tanks”</a> provides guidance on correctly conducting manual tank gauging.</li><li>• EPA’s <a href="#">“Introduction to Statistical Inventory Reconciliation for Underground Storage Tanks”</a> provides guidance on correctly conducting statistical inventory reconciliation.</li><li>• EPA’s Office of Emergency Management</li></ul>
--	---	--

		<p>provides <a href="#">guidance on chemical emergency preparedness, prevention, and response</a>.</p> <ul style="list-style-type: none"> <li>• The <a href="#">National Work Group on Leak Detection Evaluations</a> provides a list of leak detection evaluations for storage tank systems which allows facilities to verify that their monitoring equipment meets regulatory requirements.</li> </ul>
<p><b>Evaluation of Compliance</b> The EMS must include procedures to periodically evaluate compliance with applicable legal and other requirements.</p>	<p><b>Evaluation of Compliance</b> All local, state, and federal UST management requirements that apply to the facility should be evaluated to determine compliance. The evaluation should also determine whether relevant “other” commitments the facility has made are satisfied.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Assess existing procedures for monitoring UST compliance (including release prevention and release detection procedures).</li> <li>• Conduct periodic assessments to ensure compliance with relevant UST permits.</li> <li>• Communicate results of compliance evaluations to build awareness of regulatory commitments.</li> <li>• Identify and address areas of noncompliance installing additional operation controls where necessary.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• EPA’s <a href="#">UST Compliance Assistance Package</a> provides a list of compliance assistance resources.</li> <li>• EPA’s <a href="#">“Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists”</a> provides compliance monitoring checklists.</li> <li>• EPA’s <a href="#">“Model Underground Storage</a></li> </ul>

		<p><a href="#">Tank Environmental Results Program Workbook (Based on the Federal Regulations)</a>” provides compliance checklists for USTs (see Chapter 4).</p> <ul style="list-style-type: none"> <li>• EPA’s Region 9 <a href="#">Underground Storage Tanks, Education and Outreach</a> provides a compliance checklist for preventing leaks and spills at service stations.</li> <li>• EPA’s <a href="#">“UST Systems: Inspecting and Maintaining Sumps and Spill Buckets—Practical Help and Checklist”</a> provides guidance for operating and maintaining UST systems.</li> <li>• EPA criteria for determining significant UST operational compliance include proper equipment, equipment functionality, and imminent threat of release—the basis for these matrices: <ul style="list-style-type: none"> <li>○ <a href="#">Release Prevention Matrix</a></li> <li>○ <a href="#">Release Prevention Addendum</a></li> <li>○ <a href="#">Release Detection Matrix</a></li> <li>○ <a href="#">Release Detection Addendum</a></li> </ul> </li> <li>• Draft guidelines for new <a href="#">EPAact UST provisions</a>.</li> <li>• EPA’s <a href="#">Enforcement and Compliance History Online (ECHO) database</a>.</li> </ul>
<p><b>Nonconformity: Corrective and Preventative Action</b> The EMS must include procedures for identifying and correcting nonconformities, mitigating their environmental impacts, and defining actions to avoid nonconformity</p>	<p><b>Nonconformity: Corrective and Preventative Action</b> EMS procedures for investigating, correcting and preventing nonconformity with EMS requirements including UST requirements (in accordance with the facility’s corrective</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Assign and communicate responsibilities and procedures for identifying and correcting actual or potential UST nonconformities. Emphasize the need to identify the root cause(s) of nonconformity.</li> </ul>

<p>occurrence. Procedures must also define requirements for reviewing the effectiveness of the corrective and preventive actions taken. Findings, conclusions, and recommendations reached as a result of monitoring and audits of the EMS are the basis for corrective and preventive actions and the systematic follow-up to ensure their effectiveness.</p>	<p>action procedures) provide a systematic approach for identifying and addressing nonconformities. This effort should address responding to an existing nonconformity (such as a finding from an internal or external audit or an excursion reported by facility personnel) as well as addressing and preventing a potential nonconformity. After addressing the immediate issue, the root cause of the problem should be identified and addressed in the EMS – through training or new operational controls, for example.</p> <p>Ensure that training is provided to ensure personnel are aware of this element.</p>	<ul style="list-style-type: none"> <li>• Encourage reporting of nonconformities by providing clear guidance on what to report, and to whom.</li> <li>• Preventive actions that preclude the problem are preferred and should be emphasized.</li> <li>• Identify root causes or problems (including potential problems), make appropriate short-term fixes, and take corrective action to prevent similar situations in future.</li> <li>• Document the implementation of any necessary changes to EMS or UST procedures, programs, or operational controls.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• Common nonconformities at a facility managing USTs include: <ul style="list-style-type: none"> <li>○ Water levels in the tanks are not monitored at least monthly</li> <li>○ Facilities using inventory control do not reconcile inventory volumes daily</li> <li>○ Interstitial monitor is not properly positioned</li> <li>○ Automated tank gauging system cannot detect a 0.2 gallon per hour leak</li> <li>○ Tank size is not appropriate for manual tank gauging</li> <li>○ Tightness testing is not conducted using manufacturers’ instructions</li> <li>○ Tightness testing is not conducted within the appropriate time frames</li> <li>○ No annual function test of the</li> </ul> </li> </ul>
--	--	--

		<p>automatic line leak detector system is being conducted</p> <ul style="list-style-type: none"> <li>○ Measuring equipment is not capable of measuring 1/8 inch increments</li> <li>● <a href="#">Fact sheet regarding potential groundwater</a> issues at DOE's Brookhaven National Laboratory (Long Island, NY).</li> <li>● EPA's "<a href="#">How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers.</a>"</li> </ul>
<p><b>Control of Records</b> An EMS includes procedures for maintaining records necessary to demonstrate conformance with the EMS standard.</p>	<p><b>Records</b> Establish and maintain a central database of environmental records, including those related to USTs in operation and previously closed or removed. Define protocols for accessing, retaining, removing, and destroying records.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>● Specify procedures and responsibilities for initiating, modifying, ratifying, storing, accessing, and destroying UST-related records.</li> <li>● Clarify contractor roles and responsibilities in maintaining UST records.</li> <li>● Make records available for management review activities and, where necessary, to demonstrate that required actions have been taken.</li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>● Relevant UST-related records may include: <ul style="list-style-type: none"> <li>○ Permits and permit applications</li> <li>○ Monitoring information (line tightness, corrosion protection, water and product height)</li> <li>○ Product inventory records</li> <li>○ Maintenance records</li> <li>○ Spill release notifications and spill contingency plans</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>○ Training records</li> <li>○ Contact list</li> <li>● The USGS <a href="#">environmental management manual for USTs</a> includes specific requirements for UST-related documents (e.g., “Records documenting compliance with release detection requirements are to be maintained for 5 years or for a length of time specified by the applicable regulatory agency.”)</li> <li>● EPA’s <a href="#">“Finding Data About Underground Storage Tank Facilities”</a> provides a public database that includes information about a facility’s owner, tank systems, release records, and level of compliance.</li> </ul>
<p><b>Internal Audits</b> An EMS defines audit programs and processes to assess the EMS itself (e.g., assessing conformity to the EMS standard) at planned intervals. The results of audits must be presented to management.</p>	<p><b>EMS Audits</b> Internal audits of the EMS at planned intervals, including all elements relating to UST management, are designed to evaluate the effectiveness of the EMS, including programs, procedures, and operational controls relating to the facility’s environmental management efforts, and determine what corrective actions are necessary. The internal audit informs decision makers and enables the management review process.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>● Train the internal auditor team to evaluate the effectiveness of UST management elements in the EMS.</li> <li>● Identify areas of noncompliance, nonconformance with EMS elements, or outstanding issues with UST management and suggest corrective actions.</li> <li>● Identify issues and develop corrective actions, and verify that those actions are taken (see non-conformity element).</li> <li>● Create an effective audit program (see ISO 19011).</li> <li>● Ensure that audit findings are made available for management review process.</li> </ul> <p><b>Examples/Resources</b></p>

		<ul style="list-style-type: none"> <li>• <a href="#">Internal audit checklist from the Massachusetts Highway Department.</a></li> </ul>
<p><b>Management Review</b> Senior management reviews the EMS at regularly scheduled intervals to ensure suitability and effectiveness. Reviews assess the need for change in EMS policy or objectives and targets.</p>	<p><b>Management Review</b> Periodic management review of the EMS can highlight important progress or obstacles to continual improvement in the UST area.</p> <p>When properly carried out, the management review includes consideration of specific issues that should be presented to management for their consideration and action.</p>	<p><b>Actions</b></p> <ul style="list-style-type: none"> <li>• Present results of UST monitoring/measurement efforts in the context of related objectives and targets. Keep management updated on EMS responsibilities relating to UST management and the resources needed to achieve objectives and targets particularly as it applies to regulatory compliance.</li> <li>• Provide recommendations on how to improve performance and achieve objectives and targets relating to UST management. Consider input from contractors and suppliers if applicable.</li> <li>• Consider establishing programs to recognize outstanding UST management.</li> <li>• Discuss any upcoming plans that would affect UST management, such as facility expansions or closures.</li> <li>• Ensure senior managers are aware of potential penalties associated with non-compliance (\$11,000 per tank per day). For additional information, see "UST Enforcement Process" section of the UST Compendium <a href="#">“Underground Storage Tank Compendium”</a></li> </ul> <p><b>Examples/Resources</b></p> <ul style="list-style-type: none"> <li>• DOE’s Brookhaven National Laboratory (Long Island, NY) noted <a href="#">UST remediation</a></li> </ul>

		<a href="#">efforts as part of the EMS management review.</a>
--	--	---