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**SPCC UPDATE FOR UTILITIES**

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**ABSTRACT**

Water and wastewater utilities frequently own and operate fixed and mobile emergency generators, often powered by diesel fuel. Maintenance operations at utilities may have waste oil collection containers, as well as drums of petroleum fuels or lubricants. Facilities containing 1,320 gallons or more of petroleum products in aboveground containers of 55-gallons or greater must prepare Spill Prevention Control and Countermeasure (SPCC) Plans. Oil-filled transformers and operational equipment count toward the 1,320-gallon storage. This paper documents the history and regulatory compliance issues of the program, procedures, pitfalls, and nuances of preparing utility SPCC plans, and techniques for low cost compliance.

**SPCC BACKGROUND**

The SPCC regulation, § 40 CFR 112, was drafted under the Federal Water Pollution Control Act, Public Law 92-500 and promulgated under the Clean Water Act (CWA). The plans include secondary containment, training, periodic tank inspections by certified tank inspectors, record keeping and filling procedure monitoring, and alerts if a spill or release has occurred. The regulation requires affected facilities to develop and implement SPCC Plans and establishes procedures, methods, and equipment requirements. Subparts A through C of part 112 is often referred to as the “SPCC rule.”

The rule requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters of the United States and adjoining shorelines to develop and implement SPCC Plans. The Plan helps facilities develop containment and countermeasures that may prevent oil discharges. The requirement to develop, implement, and revise the SPCC Plan, as well as train employees to carry it out, allows owners and operators to prevent, prepare for, and respond to oil discharges to navigable waters and adjoining shorelines.

The SPCC rule covers three basic types of oil storage at a facility: Bulk Storage, Oil Filled Operational Equipment, and Oil-filled Manufacturing Equipment. Bulk storage includes fuels and other stored oil material that is consumed. Oil Filled Operational equipment includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-Filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through processes typically at manufacturing facilities). Oil-filled manufacturing equipment is not usually a component of a utility operation, and is usually found at an industry.

The regulations describe two general containment requirements, termed “specifically-sized bulk storage” contained in part 112.8 and “general facility-wide containment” in 40 CFR part 112.7. Sized bulk storage containment includes oil-contaminated drainage (e.g., rainwater) or leaks around fuel dispensers, pipelines, valves, joints, transfer connections, and tanks and tank secondary containment. For these areas, facilities should use integral tank secondary containment, berms, curbing, culverts, gutters, trenches, absorbent material, retention ponds, weirs, booms, a diked area, or a catchment basin and other barriers or equivalent preventive systems with sufficient volume to contain the largest container or compartment plus freeboard for precipitation of a 25 year 24 hour event. Secondary containment structures must be impervious and must prevent water and fuel from percolating through the soil, contaminating the soil and groundwater and possibly surfacing aboveground into navigable waters or adjoining shorelines. SPCC requirements are performance-based, which permits facility owners and operators to substitute alternative forms of spill containment if the substitute provides substantially equivalent protection against discharges to navigable waters to that provided by the systems listed above and in 40 CFR 112.7(c). The General facility wide containment includes active measures to prevent a discharge to reach storm drains, streams (perennial or intermittent), ditches, rivers, bays, and other navigable waters, and include measures such as temporary curbing, portable barriers, storm drain covers, sock mats, spill kits, or other actions that can be implemented quickly enough to prevent a discharge to navigable waters.

### **SPCC Plan Requirement Overview**

In addition to containment measures, if a facility is subject to the SPCC regulations, there must be a written SPCC plan. The SPCC plan needs to be kept on-site and shall describe measures at the facility to prevent and control a release of oil or petroleum products to navigable waters, including:

- Facility operations, staffing, site security, spill history and documentation of annual oil-handling employee training;
- Oil release scenarios that include possible volume of the spill and the direction of flow;
- Notification procedures (including an emergency call list);
- A facility site plan showing areas of oil storage and transfer piping (including ASTs and USTs, drums, totes, and other containers), facility drainage, nearby watercourses, and all oil storage;
- A description of containments or equipment used to prevent releases;

- A description of the procedures to stop, contain, and clean up any released materials, including procedures for managing collected rain water;
- Oil storage inspection procedures;
- A written commitment by management of manpower, equipment and materials to control and remove quickly the oil that may be spilled; and
- Written procedures for integrity and leak testing of tanks, containers, valves and piping.

The SPCC plan must be prepared and implemented by the dates described below. Oil-handling employees need to be trained on the contents of the SPCC plan. The SPCC plan must also be signed by facility management, and unless the plan is self-certified as described below, the plan must be certified by a professional engineer (PE) familiar with the facility. The PE is certifying familiarity with the SPCC requirements, that the PE or the PE's agent has visited and examined the facility, that the SPCC plan has been prepared in accordance with the SPCC requirements and good engineering practices, that procedures for inspections and testing have been established, and the plan is adequate for the facility. Management must document the review, evaluate, and update the plan every five years, or when there are significant changes in oil storage. Technical modification to the plan also needs to be certified by a PE, unless the plan can be self-certified. Non-technical modifications, such as changes to the contact list or phone numbers, do not require a PE certification. A complete copy of the SPCC plan must be kept on site and be available for review.

### **Compliance Dates**

On July 17, 2002, EPA published a final rule amending the SPCC rule, formally known as the Oil Pollution Prevention regulation (40 CFR part 112), promulgated under the authority of section 311(j) of the CWA. (The SPCC rule was originally promulgated on December 11, 1973 (38 FR 34164)). This rule included requirements for SPCC Plans and for Facility Response Plans (FRPs). Facility Response Plans are typically not required for utility operations, but must be verified by the approach contained in 40 CFR part 112. It also included new subparts outlining the requirements for various classes of oil; revised the applicability of the regulation; amended the requirements for completing SPCC Plans; and made other modifications (67 FR 47042). The revised rule became effective on August 16, 2002. After publication of this rule, several members of the regulated community filed legal challenges to certain aspects of the rule. Most of the issues raised in the litigation have been settled; following which EPA published clarifications in the Federal Register to several aspects of the revised rule (69 FR 29728, May 25, 2004). In addition, concerns were raised about the implementability of certain aspects of the 2002 rule.

EPA has extended the dates for compliance with the 2002 rule by extending the dates for amending and implementing revised SPCC Plans in 40 CFR 112.3(a), (b), and (c), on February 17, 2006 (71 FR 8462), which was later extended by the December 2006 amendments described below. EPA provided this delay to allow time to finalize the revisions and to provide the regulated community time to review and understand the SPCC Guidance for Regional Inspectors, which was published in December 2005. The

Agency also was concerned that the September 2005 hurricanes may have impacted the ability of those regulated to meet compliance dates.

October 31, 2007 is the current deadline for amending and implementing revised SPCC Plans for facilities (including mobile facilities) that were in operation on or before August 16, 2002. Facilities that came into operation after August 16, 2002 also must prepare and implement an SPCC Plan on or before October 31, 2007. A proposed rule will allow extension of the October 31, 2007 date to July 1, 2009.

### **Key Components of the 2002 Rule**

Highlights of the 2002 rule included:

- Exempts completely buried storage tanks subject to all of the technical requirements of the UST regulations (40 CFR Parts 280 or 281);
- Exempts portions of certain facilities or any facility used exclusively for wastewater treatment;
- Establishes a de minimis container size of 55 gallons;
- Establishes an aboveground storage capacity threshold of greater than 1,320 gallons and removes the 660 gallon threshold;
- Revises the trigger for submitting information on spills at SPCC regulated facilities to EPA to 2 discharges (over 42 gallons) in any 12-month period or a single discharge of more than 1,000 gallons;
- Allows deviations from most rule provisions (with the exception of secondary containment requirements) when equivalent environmental protection is provided;
- Provides for a flexible plan format, but requires a cross-reference showing that all regulatory requirements are met; and
- Attempts to clarify rule applicability to the storage and operational use of oil.

The 2002 rule brought about numerous other questions and litigations, some of which were addressed in the 2004 settlement described below, and in the revised December 2006 rule.

### **Settlement of 2004**

In March 2004, EPA reached settlement agreements with the American Petroleum Institute (API), Marathon Oil, and the Petroleum Marketers Association of America (PMAA) resolving several concerns. One issue settled was the definition of a loading rack (important because secondary containment or other requirements would be necessary at every loading or unloading point of oil at a covered facility). A fill pipe located at the exterior of a building or a fill connection at the tank, as typically found at many utility locations, is not considered a "loading/unloading rack," and secondary containment for the delivery vehicle may be recommended, but is not required. The settlement also addressed integrity testing, security, cost, petroleum exploration produced waters, and navigable waters. For tanks to be exempted from integrity testing (shop built tanks 30,000 gallons or less) EPA will allow a visual inspection to qualify as an "equivalent environmental inspection" if all sides of the container, including the bottom, are visible during inspection, as follows:

1. Visual inspection plus elevation of a shop-built container in a manner that decreases corrosion potential (as compared to a container in contact with soil) and makes all sides of the container, including the bottom, visible during inspection (e.g., where the containers are mounted on structural supports, saddles, or some forms of grillage) would be considered “equivalent.”
2. Similar, an approach that combines visual inspection with the placement of a barrier between the container and the ground, designed and operated in a way that ensures that any leaks are immediately detected, to be considered “equivalent.”

### **December 2006 Rule**

The December 2006 rule, which is effective February 26, 2007, does not modify the compliance dates for owners and operators of facilities other than farms. EPA is also proposing to extend the compliance dates for owners and operators of facilities until July 1, 2009 based on further SPCC regulatory revisions that EPA expects to propose in 2007.

The December 2006 amendments to the SPCC Plan requirements of the Oil Pollution Prevention regulation at 40 CFR part 112 may streamline the regulatory requirements for some facilities. These amendments:

- Provides the option to self-certify SPCC Plans in lieu of review and certification by a Professional Engineer for facilities that have an aboveground oil storage capacity of 10,000 gallons or less and meet other qualifying criteria, but eliminates “environmental equivalency” provisions in many instances that may lessen a plan’s flexibility. More stringent requirements may apply without a PE’s certification.
- Provides an alternative to the general secondary containment requirement without requiring a determination of impracticability for qualified oil-filled operational equipment.
- Defines and exempts vehicle fuel tanks and other on-board bulk oil storage containers (called motive power containers).
- Exempts mobile refuelers from the sized secondary containment requirements for bulk storage containers.
- Removes SPCC animal fats and vegetable oils requirements for certain facilities.
- Extends the SPCC compliance dates for farms.

### **Self-Certification for Qualified Facilities**

The December 2006 rule provides an option to allow the owners or operators of facilities with an aboveground oil storage capacity of 10,000 gallons or less, and meet other qualifying criteria, to self-certify their SPCC Plans in lieu of review and certification by a PE. EPA allows a self-certification hybrid approach. If all plan components meet plan requirements, then a PE can certify only portions of a Plan requiring environmental equivalence. In reality, most PEs would be reluctant to perform a partial plan certification, and the cost savings would be minimal, if at all.

<b>If a facility...</b>	<b>And the facility...</b>	<b>Then an owner/operator of a facility...</b>
<i>Has 10,000 gallons or less in aggregate aboveground oil storage capacity</i>	<i>Meets the oil discharge history criteria*</i>	<ul style="list-style-type: none"> <li>• <i>May prepare a self-certified SPCC Plan instead of a Professional Engineer (PE) reviewing and certifying.</i></li> <li>• <i>May meet tailored facility security and tank integrity inspection requirements without PE certification</i></li> <li>• <i>May prepare a Plan which includes PE-certified environmentally equivalent measures or impracticability determinations that would require PE certification for only the portions dealing with environmental equivalence and impracticability determinations. The remaining portions of the plan could be self-certified by the facility owner/operator.</i></li> </ul>

\*The self-certification option is available to a facility if the facility had not had (1) a single discharge of oil to navigable waters exceeding 1,000 U.S. gallons or (2) two discharges of oil to navigable waters each exceeding 42 U.S. gallons within any twelve-month period, in the three years prior to the SPCC Plan certification date, or since becoming subject to Title 40, Part 112 of the Code of Federal Regulations (CFR) if the facility has been in operation for less than three years.

There are two caveats that qualified facilities choosing to self-certify should be aware of; they include:

1. Environmentally Equivalent Measures. Self-certifying facilities will not be allowed to include “environmentally equivalent” alternatives to required Plan elements. As defined by the EPA, an environmental equivalent is an alternative measure to the SPCC Plan requirements that is based on good engineering practice where the alternative approach achieves the same or a more protective desired outcome. To incorporate an environmentally equivalent measure in an SPCC plan, the regulations require that a PE review the selection and implementation of each alternative. However, the regulations include specified “environmentally equivalent” measures with respect to security and integrity testing that would be available to facility owners and operators that choose to self-certify. Environmentally Equivalent measures without a PE Certification are not allowed for deviations from 1) Secondary Containment and 2) Recordkeeping. Because a PE will not be preparing wholly “self-certified” plans, this amendment will not allow the use of environmentally equivalent measures.
  
2. Impracticability of Secondary Containment. Self-certifying facilities will not be allowed to claim “impracticability” for secondary containment features required by the regulations. As allowed by the EPA, a plan prepared by a PE can claim impracticability with regard to secondary containment provided the PE includes tank and pipe integrity testing, a contingency plan, and a written commitment of manpower, equipment, and materials in the SPCC Plan. Again, because a PE will

not be preparing the “self-certified” plan, the proposed amendments will not allow impracticability claims. Self-certified Plans can not include “environmentally equivalent” alternatives to required Plan elements as provided in § 112.7(a)(2) or contingency planning in lieu of secondary containment as provided in § 112.7(d) on the basis of “impracticability.”

The self-certification option provides smaller facilities with a more flexible approach to meeting the SPCC Plan requirements; however, the EPA suggests that facilities with more complicated operations and varied oil usage may find that the PE prepared SPCC Plan provides a more cost-effective method of achieving compliance.

**Qualified Oil-Filled Operational Equipment Exemption**

The revised 2006 rule provides an alternative to the general secondary containment requirements for qualified oil-filled operational equipment when a facility meets a single spill history qualifying criterion. Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (i.e., those for pumps, compressors and other rotating equipment, including pump lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil only for the operation of the device.

<b>If a facility...</b>	<b>And the equipment...</b>	<b>Then an owner/operator of a facility...</b>
<i>Has oil-filled operational equipment</i>	<i>Meets the oil discharge history criteria*</i>	<ul style="list-style-type: none"> <li>• <i>May implement an inspection and monitoring program, develop an oil spill contingency plan, and provide a written commitment of resources to control and remove oil discharged, for qualified equipment in lieu of secondary containment for the oil-filled operational equipment.</i></li> <li>• <i>Does not need to make an impracticability determination for each piece of equipment</i></li> </ul>

\*Equipment is eligible if the facility did not discharge from any oil-filled equipment (1) more than 1,000 U.S. gallons of oil in a single discharge to navigable waters or (2) two discharges of oil to navigable waters each exceeding 42 U.S. gallons within any twelve-month period, in the three years prior to the SPCC Plan certification date, or since becoming subject to Title 40, Part 112 of the Code of Federal Regulations (CFR) if the facility has been in operation for less than three years. Eligibility for the oil-filled operational equipment alternative is determined by the discharge history from the equipment, not the entire facility.

**Motive Power Containers**

Utilities may benefit from the EPA exemption for motive power containers from the SPCC regulations. A motive power container is any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. Examples of motive power containers include trucks, automobiles, bulldozers, aircraft, cherry pickers, self-propelled cranes, self-propelled heavy vehicles, and locomotives.

The definition of motive power container does not include:

- Oil drilling or workover equipment, including rigs.
- An onboard bulk storage container which is used to store or transfer oil for further distribution.

**Mobile Refuelers**

EPA exempted mobile refuelers in the December 2006 rule from the sized secondary containment requirements for bulk storage containers. A mobile refueler is a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container. Mobile refuelers must meet the general secondary containment requirements of the rule (40 CFR part 112.7(c)).

**Animal Fats and Vegetable Oils**

The December 2006 rule removed the Animal Fats and Vegetable Oils from Subpart C of the SPCC rules.

**Extension of Compliance Dates**

<i>A facility (other than a farm) starting operation...</i>	<i>Must...</i>
<i>On or before August 16, 2002</i>	<ul style="list-style-type: none"> <li>• <i>Maintain its existing Plan Amend and implement the Plan no later than October 31, 2007*</i></li> </ul>
<i>After August 16, 2002 through October 31, 2007</i>	<ul style="list-style-type: none"> <li>• <i>Prepare and implement a Plan no later than October 31, 2007*</i></li> </ul>
<i>After October 31, 2007</i>	<ul style="list-style-type: none"> <li>• <i>Prepare and implement a Plan before beginning operations*</i></li> </ul>

\*In December 2006, EPA proposed to extend the date for owners and operators of facilities (with the exception of farms) to either (1) prepare and implement a new SPCC Plan; or (2) amend an existing SPCC Plan and implement the amended Plan until July 1, 2009. Because EPA has not yet finalized that rulemaking, the current compliance date is October 31, 2007.

**SPCC GUIDANCE MANUAL**

On November 28, 2005, EPA released the SPCC Guidance for Regional Inspectors. The guidance document assists regional inspectors in reviewing a facility's implementation of the Spill Prevention, Control, and Countermeasure (SPCC) rule at 40 CFR part 112. EPA provided a consistent understanding among regional EPA inspectors on how particular

provisions of the rule may be applied. The SPCC Guidance for Regional Inspectors is available online at <http://www.epa.gov/oilspill/guidance.htm>. Although this guidance is intended for EPA inspectors, it provides an excellent SPCC compliance tool for users, including pages 7-18 where EPA details that a facility has up to five years to complete its initial tank integrity inspections. The guidance also includes a useful sample SPCC plan.

The current manual reflects guidance from the 2002 regulations, and updates to incorporate the December 2006 revisions is expected in the summer of 2007. Key areas where the Guidance Manual will help in the preparation of and compliance with a SPCC plan include:

**Chapter 3: Environmental Equivalence** discusses the “environmental equivalence” provision, which allows facilities to implement alternate measures based on site-specific considerations, as long as the measures provide equivalent environmental protection, in accordance with good engineering practice and as determined by a PE.

**Chapter 4: Secondary Containment and Impracticability Determinations** discusses the secondary containment requirements and explains when an impracticability determination can be made and how the determination should be documented.

**Chapter 5: Oil/Water Separators** addresses various scenarios involving oil/water separators with respect to the SPCC rule requirements.

**Chapter 6: Facility Diagrams** provides guidelines on the necessary level of detail for facility diagrams included in SPCC Plans. This section also includes example facility diagrams for different types of facilities.

**Chapter 7: Inspections, Evaluation, and Testing** explains the inspection, evaluation, and testing requirements for facilities subject to the SPCC rule, as well as how “environmental equivalence” may apply for the integrity testing requirements of the SPCC rule.

## **TANK INSPECTION REQUIREMENTS**

One of the least understood and often overlooked provisions of an SPCC Plan are tank inspections. In a recent paper, Craig Durand discusses that inspections must be conducted on a regular basis using recognized industry standards and the inspections that must combine visual examination with nondestructive testing techniques. Industry standards include those from the American Petroleum Institute (API), American Society of Non-Destructive Testing (ASNT) and the Steel Tank Institute (STI). Test methods are usually recommended in the SPCC plan and are the result of evaluating factors such as tank construction, age, and the local environment. The test methods include hydrostatic, ultrasonic thickness, magnetic flux leakage, or other techniques.

The requirement for a Brittle/Fracture Analysis is typically for larger field erected tanks, and is usually not an issue for water and wastewater utilities.

SPCC plans must address 40 CFR Part §112.8(c) (6), which states: “Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing evaluates the container size and design (such as floating roof, skid-mounted, elevated, or partially buried).” Visual inspection to detect cracks, leaks, or holes must be combined with another testing technique such as:

- X-ray or radiographic analysis to measure wall thickness and detect cracks and crevices in metal,
- Ultrasonic analysis measures shell metal thickness,
- Hydrostatic testing to show leaks caused by pressure,
- Magnetic flux eddy current test in conjunction with ultrasonic analysis to detect pitting,
- Acoustic emissions testing, or
- Another system of nondestructive shell testing.

Comparison records must be kept and the container’s supports and foundations inspected. In addition, frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside the dike areas.

The 2004 settlement agreement mentioned earlier applies to certain well designed shop-built containers with a shell capacity of 30,000 gallons or under, where appropriate visual inspection would generally provide environmental protection equivalent to that provided by visual inspection plus another form of testing occurs.

For tanks not qualifying for the visual settlement agreement, API and STI provide guidance. The API Standard 653 for Tank Inspection, Repair, Alteration, and Reconstruction provides detailed guidance for AST’s. The four levels of inspection and inspection intervals provide information to document the current condition of the tanks, and timing for future inspections.

The four levels of tank inspection include:

1. Routine In-service Inspections – conducted by owner/operator personnel at least once a month. Includes a visual inspection of the tanks exterior for evidence of leaks; shell distortions; signs of settlement; corrosion; and the condition of the foundation, paint coatings, insulation systems, and appurtenances should be documented for follow-up action by an authorized inspector.
2. Formal External Visual Inspection –performed at least every 5 years or at the quarter corrosion-rate life of the shell, whichever is less. The formal external visual inspection is similar to the routine visual inspection, but is performed by a certified inspector.

3. External Ultrasonic Thickness Inspection – performed five years after placing a tank into service. On an existing tank where corrosion rates are not known, measurements must be obtained every 5 years, and when the corrosion rate is known, the interval is the smaller of the half corrosion rate life or 15 years. A certified inspector and an ASNT certified examiner must perform the inspection and testing.

4. Internal Inspection – performed before the corroded life of the bottom, or 20 years, whichever is less. If no corrosion rate is available, then the full inspection must be performed within 10 years. A certified inspector and an ASNT certified examiner must perform the inspections and testing. An internal inspection may include a comprehensive visual inspection of the entire tank interior, ultrasonic thickness testing of the bottom plates, magnetic flux leakage testing of the bottom plates, vacuum box testing of the bottom and shell to bottom weld seams, settlement surveys, and in some cases wet fluorescent magnetic particle testing of the shell to bottom weld seam.

STI developed Standard SP001-03, tank inspection guidance, with two inspection levels. The inspection levels include either a Periodic Inspection, performed by the tank owner or his designate, or a Certified Inspection performed by a Qualified Tank Inspector. STI SP001-03 refers to an API 653 inspector or an individual trained and certified by STI. Periodic inspections include an inspection checklist and include visual checks performed either monthly, quarterly, or yearly depending on what is inspected. The Certified Inspection is performed every 10 years or as determined by remaining wall thickness. The Certified Inspection generally consists of a detailed visual inspection and another method, including ultrasonic thickness testing, internal inspection, pressure testing, or other methods.

## **FINES AND PENALTIES**

Proper SPCC plan preparation, execution, and training of relevant employees is critical in maintaining the environment and minimizing financial penalties. Several facilities have been fined under this program, and we expect to see a ramp-up of enforcement in this area.

### **Administrative Penalties**

EPA may assess administrative penalties against oil or hazardous substance dischargers as well as facility owners or operators who fail to comply with the Oil Pollution Prevention regulation. The administrative penalty amounts that violators must pay have increased, and a new system of administrative penalties was created based on two classes of violations. Class I violations may be assessed an administrative penalty up to \$10,000 *per violation*, but no more than \$25,000 total. The more serious Class II violations may be assessed up to \$10,000 *per day*, but no more than \$125,000 total. A facility that has been assessed a Class II administrative penalty cannot be subject to a civil judicial action for the same violation.

### **Judicial Penalties**

Judicial penalties may be assessed against facility owners or operators who discharge oil or hazardous substances, who fail to properly carry out a cleanup ordered by EPA, or

who fail to comply with the oil pollution prevention regulation. Courts may assess judicial penalties for discharges as high as \$25,000 per day or up to \$1,000 per barrel of oil spilled (or \$1,000 per reportable quantity of hazardous substance discharged). For those discharges that result from gross negligence or willful misconduct, the penalties increase to no less than \$100,000 and up to \$3,000 per barrel of oil spilled (or per unit of reportable quantity of hazardous substance discharged). Owners and operators of facilities that fail to comply with an EPA removal order may be subject to civil judicial penalties up to \$25,000 per day, or three times the cost incurred by the Oil Spill Liability Trust Fund, as a result of their failure to comply. Finally, if the facility fails to comply with its EPA-approved SPCC plan, the civil judicial penalty may reach \$25,000 per day of violation.

### **Criminal Penalties**

EPA may pursue criminal penalties against facility owners or operators who fail to notify the appropriate Federal Agency of a discharge of oil. Specifically, under the Clean Water Act, the federal government can impose a penalty up to a maximum of \$250,000 for an individual or \$500,000 for a corporation, and a maximum prison sentence of five years.

### **Examples of Spill and Fines**

Examples of some recent oil spills and the subsequent fines stemming from the spill reaching navigable waters and the facility's failure to have developed an SPCC Plan are reported by the EPA in their Oil Spill website and are presented below:

#### **Great Barrington, Mass. Oil Facility Faces Fine for Oil Spill and Lack of Adequate Spill Prevention Plan**

(Boston, Mass. – Oct. 5, 2006) – In a complaint against a Great Barrington, Mass. oil storage and delivery company, EPA cited the firm for allegedly failing to adequately plan for and guard against oil spills at its facility, originally brought to light when an oil spill occurred at the facility in 2004. EPA is seeking penalties of up to \$157,500 for the violations.

According to the complaint filed by EPA's New England office, John B. Hull, Inc. illegally discharged approximately 1,600 gallons of diesel fuel from piping connected to two of its above ground storage tanks in Feb. 2004. The oil traveled outside of the facility's containment dike through a hole in the dike wall. The facility is located approximately 100 feet from the Housatonic River and an unknown quantity of the discharged oil reached the river. The oil discharge prompted an emergency response from the local fire department and the Massachusetts Dept. of Environmental Protection. The spill was reported to the National Response Center.

EPA's Administrative Complaint cited the company for violations of the federal Clean Water Act for the illegal discharge, and for failure to have an adequate "Spill Prevention, Control, and Countermeasure" (SPCC) plan in place at its facility, as required by the Act. SPCC Plans, which must be certified by a Registered Professional Engineer, specify spill prevention and response measures at facilities that store oil above threshold amounts.

The EPA complaint claims that the facility's most recent SPCC plan, completed in 1993, did not adequately address potential oil spill hazards. Specifically, the company failed to provide adequate oil containment measures for all of its aboveground oil storage tanks and oil transfer areas and had failed to complete a review and evaluation of its SPCC plan at least once every three years, as required by the regulations.

Recently the facility has taken steps to correct its SPCC plan and upgrade its oil storage tanks and secondary containment systems. Interim secondary containment measures have been installed to provide temporary spill protection for some oil tanks and transfer areas, and the company is in the process of obtaining all of the permits required for the construction of a new oil storage facility.

### **Maine Oil Facility Agrees to Pay Fine to EPA for Lack of Oil Spill Plan**

(Boston, Mass. – Sept. 6, 2006) - To settle claims that it had failed to guard against oil spills at its North Bath, Maine facility, an oil delivery company agreed to pay \$35,000 to the federal government.

According to a complaint filed by EPA's New England office in March, Kaler Oil Company, Inc. did not have a "Spill Prevention, Control, and Countermeasure" (SPCC) plan in place, as required by the federal Clean Water Act.

An inspector from EPA's New England office inspected the Kaler facility in October 2005 and found that, in addition to not having a plan, the company failed to construct containment around its oil tanks and loading area, leading to a risk of a spill to surface waters and/or drinking wells should tank or piping fail.

### **Connecticut Oil Facility Faces EPA Fine for Lack of Oil Spill Plan**

(Boston, Mass. – Sept. 6, 2006) - A Connecticut oil storage and delivery company faces fines of up to \$157,500 for allegedly failing to plan for and guard against oil spills at its facilities in Essex and Westbrook.

According to a complaint filed by EPA's New England office, Pennywise Oil Company, Inc. did not have "Spill Prevention, Control, and Countermeasure" (SPCC) plans in place at either its main facility in Westbrook or its bulk tank farm in Essex, as required by the federal Clean Water Act.

EPA records show that Pennywise had two prior spills, in Nov. 2005 and Jan. 2006. Both spills were caused by overfilling tanks located at 137 Dennison Road, Essex. While ground water was impacted for both discharges, neither spill discharged to navigable waters. Both spills were reported to the National Response Center which prompted an inspection by EPA.

An EPA inspector identified the lack of SPCC plans at the facilities in February, 2006. The inspector noted that, in addition to not having a plan, the company had failed to construct containment around the three bulk storage tanks and associated transfer areas at the Dennison Road location. Pennywise faces a maximum penalty of \$157,500.

## COMPONENTS OF AN SPCC PLAN

A structured approach to development of an adequate SPCC Plan for a water or wastewater utility facility includes several required components, as listed in the federal register. The critical elements in written SPCC plan include:

- Procedures the facility implements to prevent oil spills
- Control measures to prevent a spill from entering a stream, ditch, storm or sanitary sewer, pond, river or wetlands
- Countermeasures to contain, cleanup, and mitigate the effects of an oil spill
- Spill predictions
- Facility drainage
- Site security
- Secondary containment or diversionary structures
- Loading/unloading containment for tank cars and tank trucks
- Training and spill briefing

The SPCC plan can be prepared in any format the individual desires, but the plan must have a comparison chart to show how each section complies with the regulations. A typical SPCC plan comparison chart would look as follows and must be included in the written plan:

**Table 1: Petroleum Storage Compliance**

<b>SPCC Rule</b>	<b>SPCC Plan Section</b>	<b>Description of Section</b>	<b>Conformance Statement</b>
<i>112.7</i>	<i>2.0</i>	<i>General requirements for SPCC Plans for all facilities and all oil types.</i>	<i>Satisfied by this plan</i>
<i>112.7(a)</i>	<i>3.0</i>	<i>General requirements; discussion of facility's conformance with rule requirements; deviations from Plan requirements; facility characteristics that must be described in the Plan; spill reporting information in the Plan; emergency procedures.</i>	<i>Conformance issues discussed herein must be implemented.</i>
<i>112.7(b)</i>	<i>4.0</i>	<i>Fault analysis.</i>	<i>Satisfied by this plan</i>
<i>112.7(c)</i> <i>112.8(c)(2)</i>	<i>5.0</i>	<i>Secondary containment.</i>	<i>Must provide secondary containment for noncompliant drums.</i>
<i>112.7(d)</i>	<i>6.0</i>	<i>Contingency planning.</i>	<i>Must begin tank inspections and prescribed upgrades.</i>
<i>112.7(e)</i>	<i>6.0</i>	<i>Inspections, tests, and records.</i>	<i>Must keep Records.</i>

		<i>Integrity testing.</i>	
<i>112.7(f)</i>	<i>7.0</i>	<i>Employee training and discharge prevention procedures.</i>	<i>Must provide training to all employees.</i>
<i>112.7(g)</i>	<i>8.0</i>	<i>Security (excluding oil production facilities).</i>	<i>Security provided by Company, Inc.</i>
<i>112.7(h)</i>	<i>9.0</i>	<i>Loading/unloading (excluding offshore facilities).</i>	<i>Written procedures in Appendix A.</i>
<i>112.7(i)</i>	<i>10.0</i>	<i>Brittle fracture evaluation requirements.</i>	<i>Not Applicable</i>
<i>112.7(j)</i>	<i>11.0</i>	<i>Conformance with state requirements.</i>	<i>No additional State Rules for SPCC by South Carolina. Must comply with South Carolina spill reporting regulations.</i>

### **How to Prepare a Plan**

When a utility prepares or updates their plan, following a work plan is critical for saving time and money. Therefore, the authors recommend a structured approach for SPCC Plan development that includes the following steps:

1. Get a commitment of funds, schedule, and management interest. Without these assurances, this component of environmental and risk protection cannot succeed.
2. Decide on who will be responsible for plan preparation – utility staff or an outside firm, and whether the plan will have a PE certification. Without PE certification, the plan may have some reduced elements of flexibility.
3. Read through the federal register and become familiar with the EPA’s Guidance Manual and subsequent updates. These documents, as well as many other references can be found with simple web searches.
4. Most utility operations will not require a Facility Response Plan (those oil storage facilities with a potential for significant harm if large quantities of oil are released). Verify and document whether this additional plan component is required in the SPCC plan.
5. Prepare a check list of questions needed to prepare the various components of the plan. Either develop you own list or contact the authors for a copy of our list.
6. Visit each facility and take copious notes and pictures of each area of oil storage, whether it is diesel or gasoline fuel for utility vehicles or standby generators, waste oil containers, drums 55-gallons or larger, transformers or other electrical equipment on your property, whether owned by the utility or by the electrical supplier (remember shell capacity of oil containing areas that are 55-gallons and larger are included in the plan), and other oil storage areas. Flow-through wastewater process tanks that have an oil storage area are excluded, but if the removed oil is stored in a separate container or tank, that separate area is included in the plan. You will need this inventory information to prepare an inventory chart.

7. When you prepare the chart, note if secondary containment or other types of acceptable containment exists. Note if double-walled tanks are UL listed and have lockable drain valves, interstitial leak monitoring, spill containment structures or embankments, and if they are exposed to precipitation, do they have sufficient freeboard to contain a 24 hour, 25 year rain event. Also note if other tank requirements are met, such as overflow protection including a sight gauge, liquid level sensor, high level alarm, or other manual or remote level or leak sensing devices are present. Be sure to include a procedure to check their operation and control wiring frequently.
8. Document if there is a containment area for bulk loading/unloading of fuels, and is it large enough to contain the largest tank or compartment of the delivery truck. The area should be noted whether it contains a manual and locked drain valve or a curb cut that can be temporarily closed with a sandbag or other temporary closure device when a delivery truck is present, or a drainage trench that flows to an adjacent containment structure. Is the area or the tanks exposed to precipitation or is the area covered?
9. Document if security issues are addressed – is there a chain link fence with lockable gate, security guards, video monitors, lockable drain valves, master flow valves, and lockable starter controls.
10. Gather emergency contact information, sources of emergency response contractors and equipment, and other management information, such as written training programs that currently exist. Some training programs can be slightly modified to comply with plan training requirements.
11. Do a fault analysis of potential failures from tanks, delivery mishaps, overflows from generator day tank control failures, or contractor operations that may cut control or product lines, showing where the spilled oils will travel.
12. Decide what spill control equipment is needed and where it should be located. Many companies offer complete spill cleanup kits that are easily available through the web. Put these locations on the facility graphic.
13. Develop or upgrade facility graphics showing oil storage areas, flow paths if an oil release occurs, facility drainage and nearby watercourses, and other plan requirements. Don't forget locations of oil in transformers and other electrical equipment that have shell capacities of 55-gallons or more.
14. The plan may identify improvements to your utility operation – whether secondary containment upgrades, security or lighting improvements, fill alarms, or other structural or management items. There may also be recommended improvements that are not plan requirements. An example of a recommended improvement may be a tank fill area that may be close to a watercourse or a raw water intake. A utility may wish to include the fill rack area containment provisions voluntarily in the tank loading area for spill protection of the nearby waters. The required plan improvements must be completed by the compliance schedule dates listed earlier.
15. Assemble the information into a written plan using the guide above and sample plans available in the EPA Guidance Manual.

16. Remember to comply with inspection, training, tank integrity testing schedule, and the five year (or more frequent update if tank elements are repaired or changed) updates.
17. Develop a document, training and inspection report retention policy to keep files at least 3 years.
18. Keep the plan at the site and use it! The plan does not have to be submitted to EPA or the state, but must be available at the facility.

## **CONCLUSION**

Oil SPCC compliance at utility operations with various oil storage components can require considerable planning, resources, and commitment of personnel. The SPCC Plan requires a very detailed understanding of the federal SPCC rules, state regulations, and industry standards. Oil storage tank management is a component of overall regulatory compliance, risk management, fine and penalty avoidance, and good environmental stewardship. Centralizing responsibility at utilities with numerous oil storage locations is a recommended approach that can save time and money and help a utility maintain compliance. As demonstrated above, financial and public relations impacts from oil spill or SPCC violations can significantly impact operations, resulting in severe fines, jail, and possibly the revocation of a discharge permit. These impacts can be minimized with a well thought plan and attentive commitment to the SPCC program at your utility.

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