

# **EPA's Regulatory Policy and Performance-based Approach to Prevention of Inland Oil Spills**

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## **ABSTRACT**

Since the early 1970s, the prevention of inland oil spills has been a focus of the United States Congress and of the Environmental Protection Agency (EPA). The Federal Water Pollution Control Act provides EPA with the authority to develop regulations to prevent oil spills from non-transportation-related facilities. EPA promulgated regulations in 1974 that require non-transportation-related facilities to develop oil spill prevention plans. Several large inland oil spills in the late 1980s sparked Congress, EPA, and the U.S. Government Accounting Office (GAO) to react, with EPA and GAO recommending changes to the oil spill prevention requirements. EPA finalized these amendments in 2002, and faces opposition from the regulated community regarding the impact of these regulations.

This paper provides an overview of the history of EPA's regulatory policy for inland oil spill prevention. EPA developed a performance-based approach that allows flexibility in meeting requirements for prevention activities. The regulation applies to a wide variety of facilities, including those involved in the exploration, production, refining, and storage of oil. The use of a performance-based policy approach, in contrast to a more prescriptive set of rule requirements, has proven challenging due to the variety of facilities regulated under EPA's jurisdiction. In a recently proposed regulatory amendment, EPA explores allowing a combination of prescriptive and performance-based approaches for facilities with smaller storage capacities, while maintaining the flexibility of a performance-based rule for larger capacity facilities.

## **1. Introduction**

Performance-based regulations allow a regulated entity the flexibility to implement rule requirements in a manner most efficient for its particular situation. Recently, the notion of regulatory agencies setting goals for performance, rather than mandating specific methods of compliance, has gained increasing attention in the United States. Many perceive traditional regulatory regimes as narrowly defined, overly prescriptive, and unreasonable for individual cases, with critics arguing that unreasonable regulations impose unneeded burden. The executive branch of the United States government has as a matter of policy embraced a performance-based approach at the highest levels of government. Executive Order 12866, signed by President Bill Clinton in 1993 and retained by President George W. Bush, directs agencies to identify and assess alternative forms of regulation and specify performance objectives, rather than prescribing the behavior or manner of compliance that regulated entities must adopt.<sup>1</sup> Each executive branch agency must undergo a rigorous review by the Office of Management and Budget (OMB) while developing a rule. OMB evaluates each rule and determines whether performance-based approaches have been considered adequately. President Clinton noted that "command and control" regulations can be particularly limiting for environmental regulations because they discourage technological innovation that could lower

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<sup>1</sup> Executive Order 12866, "Regulatory Planning and Review," September 30, 1993, 58 FR 51735.

compliance costs or achieve environmental benefits beyond what is required. In his strategy for reinventing environmental regulation, one of Clinton's key principles stated, "Environmental regulations must be performance-based, providing maximum flexibility in the means of achieving our environmental goals, but requiring accountability for the results."<sup>2</sup>

As an example of performance-based environmental regulation, the U.S. Environmental Protection Agency (EPA) revised the Spill Prevention, Control, and Countermeasure (SPCC) rule in 2002 to provide the regulated community additional flexibility in meeting its requirements and more options to prevent and control oil spills. However, given the wide variety of facilities subject to this rule, EPA does not rely on a purely performance-based approach. This paper explores the history of the SPCC regulation and describes EPA's recent attempt to balance performance-based and prescriptive requirements in order to suit the wide variety of regulated facilities.

## 2. Legislative History

The Water Quality Improvement Act of 1970 (WQIA)<sup>3</sup> provided the federal government broad authority to clean up oil spills, require a polluter to notify the proper authority of a discharge, pay the cost of cleanup, and establish requirements to prevent discharges. WQIA amended the Federal Water Pollution Control Act (FWPCA) to broaden the federal government's role in preventing and responding to oil spills, including, for the first time, discharges from onshore facilities. Specifically, WQIA stated that:

- The discharge of oil into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, is prohibited, except in certain circumstances, such as under conditions that the President determines are not harmful (section 11(b)(2)).
- The President will determine "those quantities of oil, the discharge of which, at such times, locations, circumstances, and conditions, will be harmful to the public health or welfare of the United States..." (section 11(b)(3)).
- The President will issue regulations that establish procedures, methods, and requirements for equipment to prevent discharges of oil from vessels and from onshore facilities and offshore facilities (section 11(j)(1)(C)).

In 1972, Congress restructured FWPCA; the language now found in section 311 carried forward much of WQIA section 11, with minor modifications. When further amended in 1977, FWPCA became commonly known as the Clean Water Act, or CWA.

In 1970, the President signed an Executive Order<sup>4</sup> delegating his broad responsibility under FWPCA to develop and enforce regulations that establish procedures, methods, and equipment to prevent discharges of oil and to contain such discharges to EPA and the Department of Transportation (DOT). DOT is responsible for transportation-related onshore and offshore facilities, and EPA is responsible for all non-transportation-related facilities. The

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<sup>2</sup> President Bill Clinton and Vice President Al Gore, "Reinventing Environmental Regulation," March 16, 1995. Available at <http://govinfo.library.unt.edu/npr/library/rsreport/251a.html> (accessed January 21, 2006).

<sup>3</sup> Public Law 91-224, April 3, 1970.

<sup>4</sup> Executive Order 11548, "Delegating functions of the President under the Federal Water Pollution Control Act, as amended," 35 FR 11677, July 20, 1970. Superseded by Executive Order 11735, "Assignment of functions under section 311 of the Federal Water Pollution Control Act, as amended," August 3, 1973, and Executive Order 12777, "Implementation of Section 311 of the Federal Water Pollution Control Act of October 18, 1972, as Amended, and the Oil Pollution Act of 1990," October 18, 1991.

terms were defined in a 1971 Memorandum of Understanding (MOU) between EPA and DOT.

### **3. EPA's Early Oil Spill Regulations**

#### *3.1 Discharge of Oil Regulation (40 CFR part 110)*

The Discharge of Oil rule fulfills the requirement for a harmful quantity determination under WQIA. Originally promulgated in 1970,<sup>5</sup> the rule defines what quantity of discharged oil constitutes a harmful spill and sets out provisions requiring the reporting of oil spills to the government.

The current Discharge of Oil rule states that any discharge of oil that can cause a film or sheen upon, or discoloration of the water or adjoining shorelines, constitutes "a discharge of oil in such quantity as may be harmful." (This is known as the visible "sheen test.") Discharges that violate applicable water quality standards or cause a sludge or emulsion to be deposited beneath the surface of the water are also considered quantities that may be harmful.<sup>6</sup> The rule requires any person in charge of an onshore or offshore facility to immediately notify the National Response Center as soon as he or she has knowledge of any discharge of oil from his/her facility in a quantity that may be harmful (a violation of CWA section 311(b)(3)).<sup>7</sup>

#### *3.2 Oil Pollution Prevention Regulation (40 CFR part 112)*

The original Oil Pollution Prevention regulation (better known as the Spill Prevention, Control, and Countermeasure (SPCC) rule) was promulgated in December 1973 and became effective in January 1974.<sup>8</sup> Following CWA section 311(j)(1)(C) and the jurisdictional definitions in the EPA-DOT MOU, the regulation established oil discharge prevention procedures, methods, and equipment requirements for non-transportation-related facilities. The main thrust of the rule is the requirement for facilities to prepare a Professional Engineer (PE)-certified plan outlining their spill prevention methods. The applicability of the SPCC rule is closely related to the reporting requirement for harmful discharges to navigable waters (40 CFR part 110). Thus, the owner or operator of a non-transportation-related facility is not required to develop an SPCC Plan if the facility, because of its location, could not reasonably be expected to discharge a reportable quantity of oil into navigable waters or adjoining shorelines. The scope of the regulation covered facilities with an aboveground (non-buried) oil storage capacity greater than 1,320 gallons (or greater than 660 gallons aboveground in a single tank) or a buried underground oil storage capacity greater than 42,000 gallons. The rule applies to the use, handling or storage of all types of oil, including non-petroleum oils, and regulates a very wide range of facilities throughout the exploration, production, refining, storage and end use processes.

The 1974 rule included sections on general applicability, relevant definitions, the requirement for preparation of SPCC Plans, provisions for SPCC Plan amendments, civil penalty provisions, and requirements for the substance of the SPCC Plans. An important aspect was

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<sup>5</sup> 18 CFR part 610, September 11, 1970. Originally published by the Federal Water Quality Administration (EPA's predecessor); EPA later re-published the rule as 40 CFR part 110. EPA amended the rule in 1976 to update legislative references and to reflect changes in U.S. Coast Guard regulations for reporting oil spills.

<sup>6</sup> 40 CFR 110.3

<sup>7</sup> 40 CFR 110.6. Also applies to persons in charge of a vessel. The National Response Center (NRC) is the sole U.S. federal point of contact for reporting oil and chemical spills. It gathers and distributes spill data for Federal On-Scene Coordinators and serves as a communications and operations center. The data, reports and trends associated with this spill reporting requirement are managed by the United States Coast Guard and are available at <http://www.nrc.uscg.mil>.

<sup>8</sup> 38 FR 34164, December 11, 1973.

the requirement for a registered Professional Engineer (PE) to review the SPCC Plan and certify that it was prepared in accordance with good engineering practices.<sup>9</sup> Since the SPCC Plan does not need to be submitted and approved by regulatory authorities, the PE acts as an independent agent in ensuring that the site-specific measures implemented by the facility are environmentally protective and conform to good engineering practices.

Consistent with the FWPCA, the goal of the SPCC rule is to prevent all discharges of oil in quantities that may be harmful. In developing the rule, EPA recognized the wide range of regulated facilities, and that to achieve its goal, “no single design or operational standard can be prescribed for all non-transportation-related facilities, since the equipment and operational procedures appropriate for one facility may not be appropriate for another because of factors such as function, location, and age of each facility.”<sup>10</sup> The minimum set of requirements for an SPCC Plan included fundamental and professionally accepted engineering practices that had shown a high degree of success in preventing spills. These requirements were originally called “guidelines” and were written in a way so as to “give the engineer preparing the Plan greater latitude to use alternative methods better suited to a given facility or local conditions.”<sup>11</sup> For example, among the requirements for drainage water treatment found in §112.7(e)(1)(v), requirements for lift pumps were specified for certain circumstances. The provision ended, “In any event, whatever techniques are used, facility drainage systems should be adequately engineered to prevent oil from reaching navigable waters in the event of equipment failure or human error at the facility.” This allowed the Plan preparer and PE certifying the Plan the flexibility to determine what type of pumps or facility drainage systems are best suited to the particular facility. Other provisions also provided suggested alternative methods of design. For example, §112.7(e)(3) describes requirements for buried piping installations, “An alternative would be the more frequent use of exposed pipe corridors or galleries.” (38 FR 34168, December 11, 1973).

As noted in the preamble to the 1973 proposal, “This approach places responsibility on the owner or operator ... to identify effective methods, procedures, and equipment requirements to prevent oil spills.”<sup>12</sup> The preamble further notes, however, that the owner/operator must incorporate these items into a Plan that conforms with the minimum standard guidelines contained in the regulation or with state regulations, whichever are more stringent.

#### **4. Amendments to the SPCC Rule**

Two large inland spills were the impetus for revisions to the SPCC rule. In January 1988, a four million-gallon aboveground storage tank in Floreffe, Pennsylvania, split apart, collapsed, and released approximately 3.8 million gallons of diesel fuel. Of this amount, approximately 750,000 gallons were discharged, via an uncapped storm drain, into the Monongahela River. The spill temporarily contaminated drinking water sources; damaged the ecosystems of the Monongahela and Ohio rivers; killed thousands of birds, fish, and other wildlife; and negatively affected private property and local businesses. Studies concluded that the cause of the collapse was brittle fracture of the tank shell, often caused by inadequate steel toughness, stress, temperature, and a flaw in the steel. Similar catastrophic aboveground oil storage tank

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<sup>9</sup> 40 CFR 112.3(d). 38 FR 34166, December 11, 1973.

<sup>10</sup> 38 FR 34164, December 11, 1973

<sup>11</sup> 38 FR 34165, December 11, 1973

<sup>12</sup> 38 FR 19334, July 19, 1973

failures have been documented throughout the world since the 1940s, involving tanks of dimensions and metals that make them susceptible to fracture in cold temperatures.<sup>13</sup>

In April 1988, the roof drainage system of a 12.6 million-gallon oil storage tank in Martinez, California failed as a result of malfunctioning equipment. Approximately 400,000 gallons of crude oil drained from the tank into a nearby creek. The oil then ran into a marsh and Carquinez Strait, and ultimately into San Francisco Bay. The spill caused significant damage to the local ecosystems, killed indigenous wildlife, and damaged private property. The discharge occurred because a flexible rainwater drain pipe inside the tank separated from its coupling, and the cutoff valve was left open. An investigation of the spill revealed that Shell Oil violated its internal operating procedures by leaving an open berm valve unattended. SPCC inspections reveal that other facility owners/operators inadvertently (or, in rare cases, purposely) leave the drainage valves for secondary containment areas in an open position, rendering containment structures useless.

#### 4.1 *SPCC Program Task Force*

Following the Monongahela River oil spill, an SPCC Program Task Force convened to review the implementation of the SPCC regulation and to examine possible improvements. The Task Force consisted of members from EPA, U.S. Coast Guard, and other federal, state, and regional agencies. Its findings focused on the prevention of catastrophic discharges and recommended changes to the SPCC program.<sup>14</sup>

The Task Force recommended that EPA establish additional technical requirements for SPCC Plan preparation and implementation, including:

- Requiring tanks to meet certain industry standards;
- Requiring more rigorous integrity testing and periodic inspection of tanks and secondary containment;
- Differentiating SPCC requirements based on facility size;
- Requiring facility-specific contingency planning and countermeasures to employ if a discharge extends beyond the site in an uncontrolled manner; and
- Ensuring that employees undergo response training.

#### 4.2 *GAO Reports and Recommendations*

In response to both the Monongahela River spill and the spill in Martinez, California, the General Accounting Office (GAO) examined the adequacy of federal regulation of aboveground oil storage tanks and the extent to which the regulations addressed the unique problems of inland oil discharges. GAO's report<sup>15</sup> contained recommendations on regulations, inspections, enforcement, and government response that were similar to those of the SPCC Program Task Force. To amend the SPCC regulation and inspection program, GAO recommended that EPA require:

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<sup>13</sup> The American Petroleum Institute (API) has reviewed this failure mechanism and provides brittle fracture evaluation criteria in its API Standard 653, "Tank Inspection, Repair, Alteration, and Reconstruction."

<sup>14</sup> "The Oil Spill Prevention, Control, and Countermeasures Program Task Force Report," U.S. EPA, Interim Final Report, May 13, 1988.

<sup>15</sup> "Inland Oil Spills: Stronger Regulation and Enforcement Needed to Avoid Future Incidents," GAO/RCED-89-65, February 1989.

- Construction and testing of aboveground oil storage tanks in accordance with industry and other specified standards;
- Facility planning to respond to a spill that overflows facility boundaries;
- Design and operation of storm water drainage systems to prevent oil from escaping through them; and
- Coordination with state and local authorities, development of procedures for conducting and documenting inspections, implementation of minimum training procedures for inspectors, and establishment a national policy for fining violators.

#### 4.3 *Substantive Proposals*

Following the recommendations of the SPCC Program Task Force and GAO, EPA proposed substantive revisions to the SPCC requirements and solicited public comment on three occasions:

- On October 22, 1991, EPA proposed significant changes in the applicability of the SPCC rule and in the required procedures for completing SPCC Plans, as well as the addition of a facility notification provision. (56 FR 54612)
- On February 17, 1993, EPA published a proposed rule that included: (1) a requirement for an SPCC Plan to address training and methods of evaluating containers for protection against brittle fracture; (2) provisions for EPA Regional Administrators to require amendments to an SPCC Plan and to require a Plan from an otherwise exempt facility when necessary to achieve the goals of the CWA; and (3) a requirement for the owner/operator to submit the Plan if he/she invokes a waiver to certain technical requirements of the rule. (58 FR 8824)
- On December 2, 1997, EPA proposed further revisions to the SPCC rule in an effort to reduce the information collection burden without creating an adverse impact on public health or the environment. The proposed revisions were intended to give facility owners and operators flexibility to use alternative formats for SPCC Plans; to allow the use of certain records maintained pursuant to usual and customary business practices, or pursuant to the National Pollutant Discharge Elimination System program, in lieu of records mandated by the SPCC requirements; to reduce the information required to be submitted after certain discharges; and to extend the interval between SPCC Plan reviews by the facility owner/operator. (62 FR 63812)

#### 4.4 *2002 Final Rule*

In 2002, EPA issued a final rule amending the Oil Pollution Prevention regulation, which modified or adopted many aspects of the proposals described above. The rule exempts many completely buried tanks, containers storing less than 55 gallons, and certain wastewater treatment operations/facilities; raises the regulatory threshold; and both reduces information required after a discharge and raises the regulatory trigger for information submission. In addition, the rule decreases the frequency of Plan review and evaluation from every three years to every five years. Technical changes to the rule include: requiring brittle fracture evaluation for field-constructed aboveground containers; strengthening the integrity testing requirements; finalizing additional general requirements for spill planning, preparedness, and reporting; adding a requirement for a facility diagram; clarifying the rule's applicability to the operational use of oil; and making the PE certification and associated attestation more specific.

The rule allows alternative formats for SPCC Plans if they include cross-references to applicable rule provisions, and mandates specific timeframes for employee training. In addition, the final rule includes new subparts outlining the requirements for various classes of oil.

#### 4.5 *The SPCC Rule as a Performance-based Regulation*

One of the features of the 2002 rule is its flexible, performance-based nature.<sup>16</sup> Provisions dealing with industry standards, environmental equivalence, impracticability of secondary containment, are examples of flexibility mechanisms embedded in the regulation.

One of the tools available to a facility owner/operator, and the certifying PE, in determining the most appropriate design methods, according to good engineering practice, are industry standards. Industry standards are technical guidelines created by experts in a particular industry for use throughout that industry. These guidelines assist in establishing common levels of safety and common practices for manufacture, maintenance, and repair. Published by standard-setting organizations often using a consensus process, standards establish the minimum accepted industry practice. When certifying an SPCC Plan, the PE must now attest that he or she considered applicable industry standards (§112.3(d)(1)(iii)). EPA provides examples of industry standards throughout the preamble to the 2002 rule and identifies specific standards that may assist a facility with compliance. However, EPA does not incorporate specific standards by reference in the rule text itself; that is, it does not require adherence to any specific industry standards. The facility owner/operator and certifying PE may decide which standards are most appropriate for the facility, and, if none, determine an alternate approach according to good engineering practice. EPA did not want to limit a PE's professional judgment by designating any particular standard.

EPA added a provision in 2002 at §112.7(a)(2) to give additional flexibility to an owner or operator to provide alternate measures from those specified in the rule, if these measures achieve equivalent environmental protection. Known as the "environmental equivalence" provision, it allows facilities to deviate from certain requirements of the SPCC rule by implementing alternate measures, certified by a PE, that provide equivalent environmental protection. Measures that are subject to environmental equivalence deviations include such items as security, site drainage, and the integrity testing of bulk storage containers. Deviations from the secondary containment requirements, administrative provisions of the rule, and certain additional requirements, such as recordkeeping and training provisions, are not allowed. In order to take advantage of this rule flexibility, a facility owner/operator must state the reason(s) for nonconformance in the SPCC Plan, and describe, in detail, how the alternate methods will achieve equivalent environmental protection.

Section 112.7(c) requires appropriate containment and/or diversionary structures or equipment to prevent a discharge. The provision lists several suggested systems, but does not specify

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<sup>16</sup> "Performance-based" regulations may be loosely or tightly specified. For example, a loosely specified performance standard could require that vegetation adjacent to a railroad track be controlled so that it "does not become a fire hazard or obstruct visibility." Such a regulation provides less guidance to the railroad, and gives more discretion to both the railroad and the regulator, than does a tightly specified regulation requiring that vegetation be controlled so that it "remains at least three feet away" from railroad track. (Coglianese, C. et al, "Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protections," Regulatory Policy Program Report No RPP-03 (2002)). The SPCC rule, which sets a performance goal (no discharges of oil into navigable waters) and provides a set of required preventative measures but gives discretion as to how to implement some of these measures, can be considered a *tightly specified* performance-based regulation.

that any of these are required in any particular situation. Although the rule specifies performance criteria for certain types of equipment (e.g., secondary containment for bulk storage containers must be sufficient to contain the capacity of the container plus sufficient freeboard for precipitation), the choice or particular design of a secondary containment method is made by the facility owner/operator and certifying PE. Additionally, the provision in §112.7(d) regarding impracticability of secondary containment was retained (with some minor modifications) from the 1973 rule. This provisions allows, in situations where secondary containment is not practicable, the owner/operator to substitute an oil spill contingency plan and a written commitment of manpower, equipment, and materials to expeditiously control and remove any quantity of oil discharged that might be harmful. The owner/operator is required to clearly explain the reason for a determination of impracticability in the SPCC Plan, and for bulk storage containers, conduct periodic integrity testing of containers and associated valves and piping. This allows alternate methods of protection, for example when there is not enough space to physically build appropriately sized containment, or containment could not be designed in such a way as to be compatible with fire codes.

Other examples of areas where the revised SPCC rule provides flexibility are in the requirement for Plan format and method for integrity testing. Facility owners/operators can prepare the SPCC Plan according to any format they choose, as long as the Plan is supplemented with a section cross-referencing the applicable SPCC provisions. EPA requires containers to be periodically tested for integrity. The methods of integrity testing are not specified; EPA does not require a particular industry standard or technique to be used. Section 112.8(c)(6) states that the facility owner/operator must combine visual inspection with another testing technique and provides suggestions (but does not require a certain type).

The 2002 rule also retained the requirement for a licensed PE to review and certify the SPCC Plan. Given the rule's flexibility in choosing implementation strategies, and the fact that EPA does not provide any formal approval of SPCC Plans, a PE's specialized expertise ensures that the facility's equipment, design, construction, and maintenance procedures are in accordance with good engineering practices and meet discharge prevention objectives of the rule. The PE's role is to provide the technical judgment necessary to determine the best method of compliance, and to help create an SPCC Plan that customized to a facility's site-specific characteristics.

When EPA published proposed revisions to the SPCC rule in 1991, the regulated community generally supported the environmental equivalence provision and other areas of increased flexibility. Commenters agreed that, in some cases, the requirements in the sections subject to the environmental equivalence provision may not be feasible for their facilities, and that the provision would encourage development of innovative spill prevention and control measures. One commenter affirmed, "The Company welcomes this flexible approach and obviously underscores EPA's dedication to 'good engineering practices.'"<sup>17</sup> In expressing support for discretionary approaches, one commenter stated, "Decisions on the issues should be deferred to the facility management based on site specifics such as age, soil conditions, spill history, traffic volume, routing, etc."<sup>18</sup>

## **5. Reaction to the 2002 Amendments**

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<sup>17</sup> S.W. Boyd, Administrator, Hazardous and Toxic Programs, Environmental Protection, Detroit Edison, December 12, 1991, Docket ID SPCC-1P-2-164.

<sup>18</sup> W.E. Tanovitch, Manager, Pollution Control, Allied Signal Inc., December 20, 1991, Docket ID SPCC-1P-2-72.

## 5.1 Concerns of the Regulated Community

When EPA promulgated the revised SPCC final rule in 2002, the regulated community responded with numerous concerns over the applicability of the SPCC rule and its ability to implement the requirements. Since July 2002, EPA received hundreds of letters, calls, e-mail messages, and other correspondence about the SPCC rule from the regulated community, and met with stakeholder groups on numerous occasions to discuss and address their issues. In November 2002, several members of the regulated community even filed legal challenges to certain aspects of the rule.<sup>19</sup> Many members of the regulated community only recently realized that the SPCC rule applies to them; others claim that the rule is unnecessarily burdensome and difficult to implement. While stakeholders from practically all regulated sectors have raised concerns in some form or another, it appears that smaller capacity facilities face unique challenges in complying with the SPCC rule.

Regulated facilities with low oil storage capacity include a variety of industries, such as farms, construction sites, automotive service centers, certain manufacturing companies, and many others. The U.S. Small Business Administration (SBA) Office of Advocacy is a vocal representative of the interests of these small facilities. The overarching concern for these facilities is the cost of PE certification for SPCC Plans. They claim that PE review and certification is overly expensive for the benefits it provides to small oil storage facilities that have simple designs and operations. A report prepared for SBA states, "Facilities that have the capacity to store relatively small quantities of oil will often have standard and relatively straightforward storage configurations. ... In these cases there is a strong argument that there is no need for a site-specific plan to be developed and little or nothing to be gained by a site visit. Since there is no existing evidence that the presence of the plans themselves reduces oil spills, it is likely that the diversion of these costs to other compliance activities will increase cost-effectiveness and environmental protection."<sup>20</sup> SBA suggested to EPA a revised approach that would create a three-tier structure of regulatory requirements according to a facility's oil storage capacity. Under this system, a facility with a larger storage capacity would be subject to all of the requirements currently in place, whereas a facility with a low capacity would not be required to have a PE certify the Plan.

Small facilities also report difficulty complying with other SPCC rule provisions. They claim that integrity testing is too expensive; visual inspections alone should be sufficient for small shop-built tanks. They also feel that the security provisions (e.g., fencing and lighting to prevent unauthorized access) are unnecessarily rigid.

## 5.2 Compliance Date Extensions

Given the large number of concerns with the revised rule, EPA extended three times the compliance dates for facilities to amend (or for new facilities to prepare) and to implement an SPCC Plan that complies with the revised requirements. The extensions provided additional time for the regulated community to understand the SPCC amendments and the implications of the litigation settlement clarifications, and to address the perceived lack of available qualified PEs and the other industry-specific concerns that were raised regarding weather, budget, and other constraints to implementing facility changes in time to comply with the rule. Providing

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<sup>19</sup> *American Petroleum Institute v. Leavitt et al.*, No. 1;102CV02247 PLF and consolidated cases (D.D.C. filed November 14, 2002). On May 25, 2004, EPA published a notice in the *Federal Register* (69 FR 29728) clarifying specific provisions of the SPCC rule that it developed in the course of settlement.

<sup>20</sup> Jack Faucett Associates, for SBA. "Proposed Reforms to the SPCC Professional Engineer Certification Requirement: Designing a More Cost Effective Approach for Small Facilities." June 2004.

compliance date extensions also alleviated the need for individual extension requests. The current compliance dates require facilities to amend their SPCC Plans by February 17, 2006, and to implement an SPCC Plan no later than August 18, 2006.<sup>21</sup>

### 5.3 Notices of Data Availability

To more fully address the concerns of small facilities, EPA announced in September 2004 that it was considering providing more focused requirements for facilities that handle oil below a certain threshold amount (“certain facilities”). In a Notice of Data Availability (NODA), published in the *Federal Register*, EPA announced the availability of a number of documents for public review and comment.<sup>22</sup> The documents included data from small facilities and described possible streamlined alternatives that could replace parts of existing regulations for small facilities (including SBA’s proposed approach). The purpose of the NODA was to collect comments, more complete data, and any additional information from the public to support or oppose the development of streamlined requirements for “certain facilities.” At the same time, EPA published a second NODA addressing alternate regulatory requirements for facilities with oil-filled and process equipment.

The comments that EPA received on the NODA were overwhelmingly supportive of streamlined requirements for small-capacity facilities. Many specifically supported SBA’s approach, or variations of it. In the words of one commenter, “This volume-based approach would reduce the regulatory impact on certain facilities handling small amounts of oil while still providing suitable environmental protections. ... This tiered approach would also help to balance the playing field between small and larger facilities by reducing the costly burden of PE certification and site visitation on smaller facilities.”<sup>23</sup>

## 6. In Contrast: A Prescriptive-based Approach

### 6.1 DOT’s Breakout Tank Rule

After the 1988 failure of the storage tank on the Monongahela River, DOT also sought to improve its regulation of aboveground oil storage tanks at transportation-related facilities. Breakout tanks are containers used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline; depending on their use, they can be subject to both EPA and DOT regulations.<sup>24</sup>

In 1999, the DOT Office of Pipeline Safety published “Adoption of Consensus Standards for Breakout Tanks” at 49 CFR part 195, which takes a more prescriptive approach than EPA’s SPCC rule. Smaller in scope than the SPCC rule, the DOT breakout tank rule regulates the method by which breakout tanks are designed, constructed, repaired, altered, reconstructed, cathodically protected, tested, inspected, and otherwise protected against various other problems. For each of these requirements, DOT incorporates industry standards by reference into the regulation. That is, for each of these activities and according to the characteristics of the tank, DOT prescribes a particular industry standard that must be followed. Unlike the

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<sup>21</sup> On December 12, 2005, EPA proposed another compliance date extension. If finalized, this rule amendment would further extend the compliance date to October 31, 2007.

<sup>22</sup> 69 FR 56182, September 20, 2004.

<sup>23</sup> IPC-Association Connecting Electronics Industries, November 19, 2004, Docket ID OPA-2004-0007-0050.

<sup>24</sup> According to 40 CFR 112.2, a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA is defined as a “complex”.

SPCC rule, however, there is no requirement for a PE to certify that the standards are implemented according to good engineering practice.

When DOT proposed the rule, most commenters favored the approach; the only commenter to oppose the regulatory approach was EPA.<sup>25</sup> According to one commenter, “the use of industry wisdom is a positive and proper step forward in the safety of workers and the general public, and protection of the environment.”<sup>26</sup>

Certain circumstances surrounding the breakout tank rule led DOT to take a prescriptive regulatory approach. The universe of regulated entities for the breakout tank rule is significantly smaller and less diverse with respect to variety of industry sectors impacted than that of the SPCC rule, as it applies only to breakout tanks. According to the DOT Environmental Assessment of the rule<sup>27</sup> there are approximately 9,000 breakout tanks in the United States, whereas the SPCC rule applies to an estimated 618,000 facilities,<sup>28</sup> each of which may have several or many containers. The scopes of the rules are also different: the breakout tank rule regulates only design and maintenance aspects of specific types of tanks in a particular type of service, and the SPCC rule covers a broader range of industry sectors, facility activities, and container types that could result in an oil discharge. In order to more fully understand why prescriptive or performance-based regulations may be appropriate in different situations, the pros and cons of each approach are examined next.

## 6.2 Advantages and Disadvantages of Each Approach

*Performance-based Approach.* An obvious benefit of the performance-based approach is its flexibility. Regulated entities often prefer having a choice in determining how to achieve a desired outcome. Performance-based regulations can more easily accommodate future improvements in technology. Under the SPCC rule, EPA sets the goal of preventing discharges of oil to navigable waters, and, for several provisions, allows the facility to determine the most cost-effective method of compliance. This flexibility is useful for regulating a wide variety of facility types under a single regulation. Given the large range of facilities that handle oil, and their varying levels of access to advances in technology, it would be difficult for the SPCC rule to prescribe very specific measures that are appropriate for every type of facility.

On the other hand, performance-based regulations depend on the ability of government agencies to specify, measure, and evaluate performance. Given the large number of facilities regulated, it is not practical for the regulator to review and approve every SPCC Plan to ensure that they meet spill prevention performance goals, as may be done in a more traditional permitting process. The regulator must rely on facility owners, operators and professional intermediaries such as PEs to select and implement measures that will meet the goals. Compliance is later verified through facility inspections.

Furthermore, performance goals may be qualitative, broad in scope, and a disadvantage of the performance-based approach is that the inherent flexibility may make it difficult for the

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<sup>25</sup> “Adoption of Consensus Standards for Breakout Tanks,” final rule, 63 FR 15928, April 2, 1999.

<sup>26</sup> John P. Barrett, PE, Director, DOT Regulatory Programs, Conoco Pipeline Company, July 16, 1998, Docket ID RSPA-1997-2095-11.

<sup>27</sup> U.S. Department of Transportation Research and Special Programs Administration, “Environmental Assessment, Pipeline Safety: Adoption of Breakout Tank Standards,” March 26, 1999, Docket ID RSPA-1997-2095-20.

<sup>28</sup> Abt Associates, Inc., for EPA. DRAFT report, “Universe of Facilities Affected by the Spill Prevention, Control, and Countermeasure Rule.” November 2, 2005.

regulator to develop guidance broad enough to cover all situations. In its “SPCC Guidance for Regional Inspectors”<sup>29</sup> EPA provided a number of examples of environmentally equivalent measures for certain provisions, but could never conceivably provide a complete list of all possibilities.

Another disadvantage is that reliable and appropriate information about performance may sometimes be difficult to obtain. Measuring performance is particularly challenging when it is based on predictions rather than actual measurable events.<sup>30</sup> For provisions that allow flexibility, the SPCC rule relies on the judgment of the PE to determine whether a measure is appropriate to prevent a discharge at an individual facility. This can create uncertainty for the facility, as well as for the inspector/enforcement staff who must rely on their own investigations of the facility’s site-specific characteristics to determine whether the measures described in the SPCC Plan are reasonable and appropriate.

From an enforcement standpoint, performance-based rules may be difficult to implement, because there is no single correct way to meet a performance standard. Prescriptive rules may have a set method of compliance for enforcement staff to look for, but performance-based rules may have several “right answers” to obtaining compliance. The potential for enforcement inconsistencies can be higher with performance-based regulation; regulated entities may be uncomfortable with the discretion given to regulators in deciding enforcement issues.<sup>31</sup>

Finally, performance-based regulations may impose excessive costs on business, particularly small companies, because these firms must search for optimal ways to meet requirements. According to a panel of regulators and academic experts, “Some firms may simply prefer to be told exactly what to do, rather than incur the costs to identify steps needed to achieve a performance standard.”<sup>32</sup>

*Prescriptive Approach.* A prescriptive approach to rulemaking is more consistent and predictable. Regulated entities are given less choice; instead, government provides a specification for compliance. This may make it easier for the regulated community to understand expectations. For example, rather than expecting facilities to develop their own methods for tank design and maintenance, the breakout tank rule simply requires a set of practices that have already been determined, through industry consensus, to represent good engineering practice. Guidance for prescriptive rules may be easier to develop, as it would be more concise in scope.

Another advantage is that enforcement of prescriptive rules is often more straightforward. It can be easier for an inspector to determine whether a specific list of measures are being followed, and relies less on his/her own judgment or that of the enforcement official.

A disadvantage to the prescriptive approach is its rigid nature; regulated entities are forced to comply with specified requirements when there may be a more cost-effective alternative. There is also no incentive to improve on existing technologies. A disadvantage to the

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<sup>29</sup> “SPCC Guidance for Regional Inspectors,” EPA, EPA-550-B-05-001, December 2005. Available at [www.epa.gov/oilspill/guidance.htm](http://www.epa.gov/oilspill/guidance.htm) (accessed January 27, 2006).

<sup>30</sup> Coglianesi, C. *et al*, “Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protections,” Regulatory Policy Program Report No RPP-03, 2002.

<sup>31</sup> May, Peter J. (2003) Performance-Based Regulation and Regulatory Regimes: The Saga of Leaky Buildings. *Law & Policy* 25 (4), 381-401.

<sup>32</sup> Coglianesi, C. *et al*, “Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protections,” Regulatory Policy Program Report No RPP-03, 2002.

incorporation of specific standards in tank rules is that every time an industry standard is modified or updated, the regulation is no longer current. The regulatory agency in turn will need to modify the regulation every time a standard is modified – a cumbersome process. In fact, many individual state aboveground storage tank programs have also taken the prescriptive approach by incorporating industry standards into their own regulations, and have found that the standards change quicker than their regulations can be amended. This results in a situation where a less costly or more effective technology is “illegal” because the rule has not incorporated the most recent version of an industry standard.

Because there are pros and cons to both approaches, it may be most appropriate in some situations for regulators to choose “hybrid” approaches that may minimize the weaknesses of either approach. In other words, regulators do not have to choose between performance-based and prescriptive methods, but can blend these two approaches.

## **7. Proposed SPCC Amendment: Blending the Approaches and Striking the Right Balance**

On December 12, 2005, EPA proposed a further revision to the SPCC rule. This amendment addresses the concerns of small facilities and would, if finalized, provide an option for qualified facilities to self-certify their SPCC Plans rather than requiring review and certification by a licensed PE. Facilities are “qualified” based on aggregate oil storage capacity (10,000 gallons or less) and spill history (no history of discharges as described in 112.1(b) for the past ten years). Qualified facilities can choose to take the option of self-certification over PE-certification; however, doing so limits the flexibility available to them in preparing the Plan; a caveat to this option is that these facilities are no longer allowed to take advantage of the environmental equivalence provisions in §112.7(a)(2) or the impracticability provision of §112.7(d). In other words, the proposal allows a qualified facility to forgo the cost of PE certification, but compliance would be tied to the prescriptive rule requirements, with no option to use alternative environmentally equivalent measures or to use a contingency plan in lieu of containment.

EPA believes that the expertise of a PE is necessary to evaluate whether particular measures provide equivalent environmental protection, and to establish appropriate contingency planning and other measures to be put in place in the absence of secondary containment; the flexibility allowed in performance-based provisions is most appropriate for SPCC Plans that are reviewed and certified by a PE. Therefore, facilities opting out of PE certification would not be allowed to take advantage of this flexibility.<sup>33</sup>

By removing the some of the SPCC rule’s inherent flexibility, under the “qualified facilities” option, EPA would essentially eliminate the rule’s performance-based nature and make it more prescriptive. However, this is a choice that the regulated entities can make for themselves. Facilities weigh the cost of having a PE review and certify an SPCC Plan that utilizes environmentally equivalent measures against any costs of preparing a Plan strictly according to the provisions of the rule. As EPA states, “In some circumstances, it may be more cost effective for a PE to prepare an SPCC Plan which utilizes environmentally equivalent measures or contingency planning, than for the owner/operator to comply with the SPCC provisions as outlined in today’s proposal. Also, facilities with unconventional operations which qualify for this alternative may find that the current rule requirement for PE certification offers a

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<sup>33</sup> 70 FR 73530, December 12, 2005

more cost-effective method of achieving compliance because it provides additional flexibility through performance-based provisions.”

This proposed SPCC rule amendment can be seen a “hybrid” approach, embracing the advantages of both performance-based and prescriptive rulemaking. In effect, the proposal provides the ultimate flexibility for smaller capacity facilities by allowing the owners or operator to choose either a performance-based or prescriptive approach to SPCC compliance, a decision that is often based on the facility’s complexity of operations. EPA believes that providing this option to “qualified facilities” may lead to increased compliance rate among the facilities allowed to utilize this approach. Based on capacity alone, a large number of facilities (approximately 322,000 in the first year<sup>34</sup>) in the SPCC universe may be able to use this option. Some “qualified facilities” may choose not to take advantage of the proposed option and maintain their Plan developed under the current SPCC requirements.

Initial reaction to this approach is difficult to gauge at this point, as the public comment period will close after the drafting of this paper. However, during a recent Congressional hearing on the SPCC rule there was a mixed reaction. SBA expressed satisfaction with EPA’s approach, stating “The Office of Advocacy supports EPA’s efforts and is pleased with the improvements EPA made to SPCC requirements through guidance and the proposed revised regulatory requirements. ... These amendments will provide relief for small businesses, while improving environmental protection by facilitating compliance by smaller firms.”<sup>35</sup> A representative of the public, with experience as a practicing PE who certified SPCC Plans, argued against allowing non-PE facility owner/operators to self-certify their Plans because they lack the qualifications to make good engineering decisions. He stated, “Exempting PE certification from SPCC Plans ... may increase the risk of spills from self-certifying facilities where managers without engineering training and/or technicians do not possess a standard professional knowledge base, ascribe to a professional code that places public protection highest, or share individual legal liability for their judgments.”<sup>36</sup>

## 8. Conclusion

The United States government supports the use of oil spill prevention methodologies to protect the nation’s water resources. The idea that “an ounce of prevention is worth a pound of cure” holds true for the prevention of oil spills; it is well recognized that the costs of oil spill prevention are much less than the costs of oil spill clean up, remediation and restoration (not to mention the government penalties and civil liabilities). Although some facility owners/operators may deny the likelihood of an oil discharge at their own facility, and therefore disagree with the need to invest in oil spill prevention methods, EPA believes that whenever oil is produced, processed or stored at a facility, there is a potential oil spill hazard. Furthermore, companies have a responsibility to be good stewards of the environment for the community in which they operate. When a facility invests in oil spill prevention methods, and spilled oil is stopped from reaching a waterbody due to the prevention techniques the facility has implemented, there is a

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<sup>34</sup> U.S. EPA, “Regulatory Analysis for the Proposed Revisions to the Oil Pollution Prevention Regulation (40 CFR Part 112)” November 2005, Docket ID EPA-HQ-OPA-2005-0001-0004.

<sup>35</sup> U.S. Senate Committee on Environment and Public Works Hearing Statements. Statement of Thomas Sullivan, Chief Counsel for Advocacy, Office of Advocacy, U.S. Small Business Administration. December 14, 2005. Available at [http://epw.senate.gov/hearing\\_statements.cfm?id=249721](http://epw.senate.gov/hearing_statements.cfm?id=249721) (accessed December 20, 2005).

<sup>36</sup> U.S. Senate Committee on Environment and Public Works Hearing Statements. Statement of James J. Corbett, PhD, Assistant Professor, Marine Policy Program, Graduate College of Marine Studies, University of Delaware. December 14, 2005. Available at [http://epw.senate.gov/hearing\\_statements.cfm?id=249737](http://epw.senate.gov/hearing_statements.cfm?id=249737) (accessed December 20, 2005).

significant return on spill prevention investment – more importantly, damage to the environment avoided.

The United States, through the promulgation of the SPCC regulation, has made the development of an oil spill prevention plan a mandatory requirement for a wide variety of facilities that handle oil. The elements of a successful SPCC Plan together assist a facility in reaching the goal of preventing oil from reaching our nation's waters. The elements that make up the Plan are subject to significant flexibility due to the performance-based approach adopted by EPA.

Despite the convenience that the performance-based rule allows for large, complex facilities that often embrace the use of environmentally equivalent measures, smaller facilities have recently appeared willing to have specific measures prescribed by government, in order to eliminate the cost of having their Plans certified by a PE. EPA believes that this regulatory approach provides a reasonable set of options to prevent oil spills at "qualified facilities." This hybrid approach strikes a balance between performance-based rulemaking (for those large more complex facilities wanting flexibility), and prescriptive rulemaking (for smaller facilities that appreciate the specific direction for compliance). EPA believes that the key to the success of a prevention program, which regulates an extremely wide set of regulated industries like the SPCC rule, is to provide options, flexibility and a balanced approach. EPA is currently receiving comment on this proposal from the regulated community, and will be reviewing these comments when this topic is presented at the Interspill conference in March 2006.