



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 29 1982

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Use of Alternative Secondary Containment Measures at Facilities Regulated under the Oil Pollution Prevention Regulation (40 CFR Part 112)

FROM: Don R. Clay *DRC*
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TO: Director, Environmental Services Division
Regions I, VI, VII
Director, Emergency and Remedial Response Division
Region II
Director, Hazardous Waste Management Division
Regions III, IX
Director, Waste Management Division
Regions IV, V, VIII
Director, Hazardous Waste Division
Region X

PURPOSE

This memorandum addresses the U.S. Environmental Protection Agency's (EPA) interpretation of the term "secondary containment" as it is used in section 112.7(c) of the Oil Pollution Prevention regulation (40 CFR Part 112), also known as the Spill Prevention, Control and Countermeasures (SPCC) regulation. It also addresses technologies that may be used to provide secondary containment for smaller, shop-fabricated aboveground storage tanks (ASTs) consistent with 40 CFR Part 112.7(c).

BACKGROUND

Since 1973, the SPCC regulation has included the following provision addressing secondary containment and the allowance for equivalent preventive systems. Section 112.7(c) states:

Appropriate containment and/or diversionary structures or equipment to prevent discharged oil from reaching a navigable water course should be provided. One of the following preventive systems or its equivalent should be

used as a minimum: (1) Onshore facilities: (i) Dikes, berms or retaining walls sufficiently impervious to contain spilled oil; (ii) Curbing; (iii) Culverting, gutters or other drainage systems; (iv) Weirs, booms or other barriers; (v) Spill diversion ponds; (vi) Retention ponds; (vii) Sorbent materials.

The SPCC regulation implements Section 311(j)(1)(C) of the Clean Water Act (CWA) for non-transportation-related facilities. In 1988, the Agency published regulations at 40 CFR Part 280 for underground storage tanks (USTs) implementing the requirements of Subtitle I of the Resource Conservation and Recovery Act. An apparent result of the implementation of the UST regulation is a trend of facilities replacing USTs with ASTs.

In response to this trend, tank manufacturers have developed various new designs for shop-fabricated AST systems. Alternative AST systems for which we have information generally do not exceed 12,000 gallons capacity. Some of these new designs include a steel or reinforced concrete secondary shell fully encasing a storage tank; others include an attached, shop-fabricated containment dike. Many other system designs may also be available. Typically, these alternative AST system designs provide containment for the entire capacity of the inner tank for spills resulting from leaks or ruptures of the inner tank.

In 1988, EPA noted in its Oil SPCC Program Task Force Report that the Agency has limited inspection resources to implement the SPCC program. Less than 1,000 of the estimated half million SPCC-regulated facilities are inspected by EPA annually. Moreover, section 311 of the CWA does not permit EPA to delegate this program to the States. The Task Force, therefore, recommended that EPA attempt to target these very limited resources to inspecting the highest-risk facilities. In general, we believe that facilities using smaller-volume AST systems generally pose less risk than larger field-erected tanks and tank farms of large uncontrolled spills reaching navigable waters, especially if these facilities are not located near sensitive ecosystems or water supply intakes.

The traditional method of providing secondary containment for ASTs has been to construct dikes, berms, retaining walls and/or diversion ponds to collect oil once it spills. Based on the experience of EPA Regional personnel implementing the SPCC regulation since 1973, those traditional means of secondary containment are very effective and reliable methods of protecting the surface waters from oil spills from ASTs. However, the SPCC regulation is a performance-based regulation that permits facility owners or operators to substitute alternative forms of spill containment if they provide protection against discharges to navigable waters substantially equivalent to that provided by the systems listed in section 112.7(c).

Consistent with section 112.1(e) of the SPCC regulation, this memorandum does not supersede the authority of "existing laws, regulations, rules, standards, policies and procedures pertaining to safety standards, fire prevention and pollution rules," including fire codes or other standards for good engineering practice that may apply to alternative AST systems.

On October 22, 1991, EPA proposed revisions to the SPCC regulation. The proposed revisions do not affect the provisions of section 112.7(c) that describe alternative systems that are substantially equivalent to those specifically listed in paragraphs (c)(1)(i) through (c)(1)(vii).

OBJECTIVE

This memorandum should allow EPA Regional personnel to provide consistent interpretation of the secondary containment provisions of section 112.7(c) of the SPCC regulation to facilities with generally smaller shop-fabricated ASTs. Alternative AST systems, including equipment and procedures to prevent reasonably expected discharges, should satisfy the secondary containment provisions of the SPCC regulation under most site-specific conditions.

DISCUSSION

As smaller shop-fabricated ASTs are increasingly appearing in the market, we have observed a number of innovative technologies to reduce the risks of both leaks and spills. Moreover, these smaller shop-fabricated tanks do not pose the same risk of large uncontrolled oil spills to navigable waters as the larger field-erected tanks. Therefore, we believe that there should be many situations in which protection of navigable waters substantially equivalent to that provided by the secondary containment systems listed in section 112.7(c) could be provided by alternative AST systems that have capacities generally less than 12,000 gallons and are installed and operated with protective measures other than secondary containment dikes. For example, some State programs provide an exemption from State spill prevention requirements for ASTs with similar capacities. However, in certain situations, these alternative AST systems might appropriately not be presumed to comply with the provisions of section 112.7(c). An example of this type of situation is facilities containing four or more ASTs or ASTs with combined capacity greater than 40,000 gallons, where a number of larger tanks are connected by manifolds or other piping arrangements

that would permit a volume of oil greater than the capacity of one tank to be spilled as a result of a single system failure.¹

The owner or operator of any facility subject to the SPCC regulation, including facilities using alternative AST systems, must adhere to all applicable provisions of the SPCC regulation. The owner or operator of each regulated facility must develop a site-specific SPCC Plan that must be certified by a Registered Professional Engineer as required by section 112.3 of the regulation. Pursuant to the requirement of section 112.7 that the SPCC Plan shall "include a discussion of the facility's conformance with the appropriate guidelines listed," a complete SPCC Plan for any facility using alternative AST systems should include a discussion of why the facility is considered to be in conformance with section 112.7(c).

In evaluating these shop-fabricated AST systems, EPA's Office of Solid Waste and Emergency Response (OSWER) has looked at requirements the Agency has established for tanks in situations where traditional secondary containment systems cannot be provided (e.g., USTs covered by 40 CFR Part 280). Additionally, OSWER has evaluated relevant State and local government requirements. OSWER also has considered factors related to alternative AST systems, including tank size, typical pumping rates used to fill and empty them, and the lower risk of large, uncontrolled oil spills from facilities using such AST systems, based on tank size, design, and pumping rates. We believe that for these smaller shop-fabricated ASTs some alternative AST systems that include adequate technical spill and leak prevention options such as overfill alarms, flow shutoff or restrictor devices, and constant monitoring of product transfers generally would allow owners and operators of facilities to provide protection of navigable waters substantially equivalent to that provided by secondary containment as defined in 40 CFR Part 112.7(c). For example, small double walled ASTs, when used with equipment and procedures described in this guidance, generally would provide substantially equivalent protection of navigable waters under section 112.7(c) of the SPCC regulation when the inner tank is an Underwriters' Laboratory-listed steel tank, the outer wall is constructed in accordance with nationally accepted industry standards (e.g., those codified by the American Petroleum Institute, the Steel Tank Institute, and American Concrete Institute), the tank has overfill prevention measures that include an overfill alarm and an automatic flow restrictor.

¹ This is based on similar capacities in proposed National Fire Protection Association standards and consideration of the risks to public health or welfare or the environment of spills of potentially larger size.

or flow shut-off,² and all product transfers are constantly monitored.³

CONCLUSION

When the only significant source of potential oil spills to navigable waters of the United States from a facility is from alternative ASTs as described in this memorandum, an SPCC Plan that is certified by a Registered Professional Engineer and that requires equipment and operating practices in accordance with good engineering practice and the principle of substantial equivalence as described above should be presumed to achieve the protection of navigable waters substantially equivalent to that provided by the preventive systems specified in 40 CFR Part 112.7(c).

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² Consistent with the performance standards for these devices as described in section 280.20(c) of EPA regulations for USTs at 40 CFR Part 280 and in an August 5, 1991, amendment, an automatic flow shut-off will shut off flow so that none of the fittings located on top of the tank are exposed to product as a result of overfilling, an automatic flow restrictor will restrict flow 30 minutes prior to overfill or when the tank is no more than 90 percent full, and a high level alarm will alert the operator one minute before overfilling or when the tank is no more than 90 percent full.

³ Consistent with the performance standard for overfill control as described in section 280.30(a) of EPA regulations for USTs at 40 CFR Part 280, an owner/operator of the facility will ensure that the transfer operation is monitored constantly to prevent overfilling and spilling.