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

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OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

MEMORANDUM

SUBJECT: Applicability of RCRA Organic Air Emission Standards to Equipment and/or Closure Devices, Subpart BB versus Subpart CC

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TO: Land, Chemicals and Redevelopment Division Directors, Regions 1-10
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Purpose and Scope

The purpose of this memorandum is to provide guidance to EPA and state permit writers and inspectors for determining whether certain equipment and/or closure devices located on covers of hazardous waste tanks, containers, and surface impoundments are subject to Subpart BB or Subpart CC of the Organic Air Emission Standards under the Resource Conservation and Recovery Act (RCRA). By clarifying the applicable regulations for certain pieces of equipment and/or closure devices, EPA aims to provide a consistent federal interpretation of the RCRA Organic Air Emission Standards at hazardous waste large quantity generator (LQG) sites and treatment, storage, and disposal facilities (TSDFs).[1]

The scope of this memorandum is focused on how Subpart BB or Subpart CC apply to certain equipment and/or closure devices; other RCRA requirements, such as the Subpart J requirements for hazardous waste tanks, may also apply but are not the subject of this memorandum.

The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or Agency policies.

Introduction and General Overview

Soon after the EPA Office of Enforcement and Compliance Assurance launched the national compliance initiative titled "Reducing Hazardous Air Toxic Emissions at Hazardous Waste Facilities" in Fiscal Year 2017, the Agency received questions about what equipment and/or

[1] See 40 CFR 260.10 (defining "large quantity generator").

closure devices are subject to Subpart BB or Subpart CC of the RCRA Organic Air Emission Standards. These questions arise in part because closure devices, which is the term used in Subpart CC, are similar to certain equipment, including valves and pressure relief devices, that are regulated by Subpart BB.[2]

The Subpart BB and Subpart CC standards of Title 40 of the Code of Federal Regulations (CFR) parts 264 (permitted facilities) and 265 (interim status facilities), which are also applicable to LQGs, differ in various ways. The Subpart BB standards establish organic air emission controls for equipment leaks, whereas the Subpart CC standards establish controls for tanks, surface impoundments and containers.[3] There are also differences in requirements between Subpart BB and CC in terms of applicability thresholds, operation, inspection, monitoring, and repair. For example, Subpart BB monitoring requirements apply to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent (100,000 parts per million) by weight for 300 hours or more per calendar year.[4] Subpart CC requirements apply to hazardous waste containers, tanks, and surface impoundments for which hazardous waste entering the unit has an average volatile organic concentration at the point of origination of 500 parts per million weight (ppmw) or greater.[5]

While both Subparts BB and CC contain provisions applicable to pressure relief devices, there are some key differences in the monitoring requirements. Under Subpart BB, owners and operators of facilities must monitor via Method 21[6] a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device or safety device in gas/vapor service within five calendar days of a pressure release to confirm the device has returned to a condition of no detectable emissions, except as provided in 40 CFR 264.1059 and/or 265.1059. This must be indicated by an instrument reading of less than 500 parts per million (ppm) above background. (See 40 CFR 264.1054 and/or 265.1054.) In contrast, under Subpart CC, the owner or operator must ***visually*** inspect (e.g., visual monitoring for gaps, holes, cracks) the closure

[2] See Appendix B for the definition of "equipment."
[3] For more information on the applicability and requirements of the RCRA Organic Air Emission Standards, visit: https://www.epa.gov/hwpermitting/applicability-and-requirements-rcra-organic-air-emission-standards.
[4] Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of 40 CFR 264.1052 through 264.1060 and/or 265.1052 through 265.1060 if it is identified per 40 CFR 264.1064(g)(6) and/or 265.1064(g)(6). (See 40 CFR 264.1050(f) and 265.1050(e)).
[5] A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average organic concentration at the point of waste origination of less than 500 ppmw is exempt from the standards specified in 40 CFR 264.1084 through 264.1087 and/or 265.1084 through 265.1087. (See 40 CFR 264.1082(a)(c)(1) and 265.1083(c)(1).)
[6] Method 21 is a test method found in 40 CFR part 60 that is utilized for the determination of volatile organic compound (VOC) leaks from process equipment, including valves, pumps, compressors, and pressure relief devices. This method is intended to identify leaks only, and not to be used as a direct measure of emission rates from individual sources. (See 40 CFR part 60 Appendix A-7 - Test Methods 19 through 25E.)

devices associated with Level 1 emission controls for tanks and containers[7] at least once a year, and first efforts to repair must occur within five calendar days and generally must be completed within 45 calendar days.[8,9]

The following sections describe EPA's guidance and rationale, and an example application of the guidance to a tank with Level 1 controls. The closing section provides a summary of EPA's interpretation.

Guidance and Rationale

EPA's interpretation is that Subpart CC applies to closure devices located in covers on top of tanks, containers, and surface impoundments (e.g., a spring-loaded pressure relief valve on a tank cover). This is because the Subpart CC regulations expressly define and apply to "closure devices" in a cover. Specifically, the regulations in Subpart CC state that:

> Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening *in a cover* such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve). (emphasis added) 40 CFR 265.1081.

This definition, and thus the applicability of Subpart CC, encompasses both conservation vents (designed for normal operations) and safety devices (designed for unsafe conditions). Conservation vents, although only mentioned and not defined in the Subpart CC regulations, are closure devices designed to maintain pressure within preset limits while preventing/reducing emissions during normal operations. Safety devices, as defined in the Subpart CC regulations, are closure devices that function exclusively to prevent physical damage to a unit or its air emission control equipment by releasing gases or vapors into the atmosphere during unsafe

[7] There are two levels of air emission controls for tanks which are determined based on the size of the tank, maximum organic vapor pressure of the waste, and whether the tank is used in a waste stabilization process. There are three levels of air emission controls for containers based on container size, organic contents, and whether the container is used in a waste stabilization process.

[8] Per the requirement for a spring-loaded pressure-vacuum relief valve, conservation vent or similar type of pressure relief device to operate with no detectable organic emissions, the closure device must satisfy the Subpart CC definition of "no detectable organic emissions" per 40 CFR 264.1081 and/or 265.1081, as determined using the procedure specified in 40 CFR 265.1084(d) (also known as Method 21). Despite that definition still referencing Method 21, Subpart CC only requires this method in limited circumstances that are specified in the regulations (e.g., for pressure tanks and surface impoundments using a cover vented to a control device). See 56 Fed. Reg. 33490 (July 22, 1991); 59 Fed. Reg. 62896 (Dec. 6, 1994); 61 Fed. Reg. 4903 (Feb. 9, 1996); 61 Fed. Reg. 59932, 59944 – 59948 (Nov. 25, 1996).

[9] States authorized to implement the RCRA program may be more stringent.

conditions (40 CFR 265.1081). In addition, a closure device connected to a manifold or closed vent system that vents to a control device,[10] is subject to Subpart CC.

Other equipment that does not satisfy the definition of "closure device" (e.g., a valve on the side of a tank) is subject to Subpart BB, as applicable.[11] See Appendix A for relevant Subpart CC regulatory definitions and citations and Appendix B for the definition and citation of "equipment."

Example of EPA's Interpretation - Tank with Level 1 Controls

The question of whether to apply Subpart CC or Subpart BB to a piece of equipment and/or closure device often arises with pressure relief devices on the top of tanks subject to the Subpart CC Tank Level 1 standards set forth in 40 CFR 264.1084(c) and/or 265.1085(c).[12] For illustrative purposes, this section describes EPA's interpretation in the context of a tank with Level 1 air emission controls.[13] See Figure 1 below for an example of a visual illustration of EPA's interpretation.

[10] In the Subpart CC Tank Level 1 context, 40 CFR 264.1084(c)(2)(iii) and/or 265.1085(c)(2)(iii) requires each opening of the fixed roof and any manifold system associated with the fixed roof to either be equipped with a closure device or connected to a closed vent system that is vented to a control device. Subpart CC includes standards for both closed vent systems and closure devices in 40 CFR 264.1087 and/or 265.1088, which reference Subpart AA standards in 40 CFR 264.1033 and/or 265.1033.

[11] Subpart BB applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight and otherwise meets the applicability criteria in 40 CFR 264.1050 and/or 265.1050. See Appendix B for the definition of equipment.

[12] Level of control is determined primarily based on tank capacity, maximum organic vapor pressure of hazardous waste in the tank and waste stabilization. If a tank qualifies for Level 1 controls, a fixed roof must be used and the owner or operator using Level 1 controls must determine the maximum organic vapor pressure for each hazardous waste placed in the tank. (See 40 CFR 264.1084(c) and/or 265.1085(c)). If a tank uses Level 2 controls, the following control options are available to the owner/operator: external floating roof (EFR), fixed roof with internal floating roof (IFR), closed-vent system to control device, pressure tank, or closed-vent system to an enclosed combustion device. (See 40 CFR 264.1084(d) and/or 1085(d)).

[13] EPA's interpretation that Subpart CC applies to closure devices located on covers on top of tanks, containers, and surface impoundments is irrespective of the level of air emission controls.

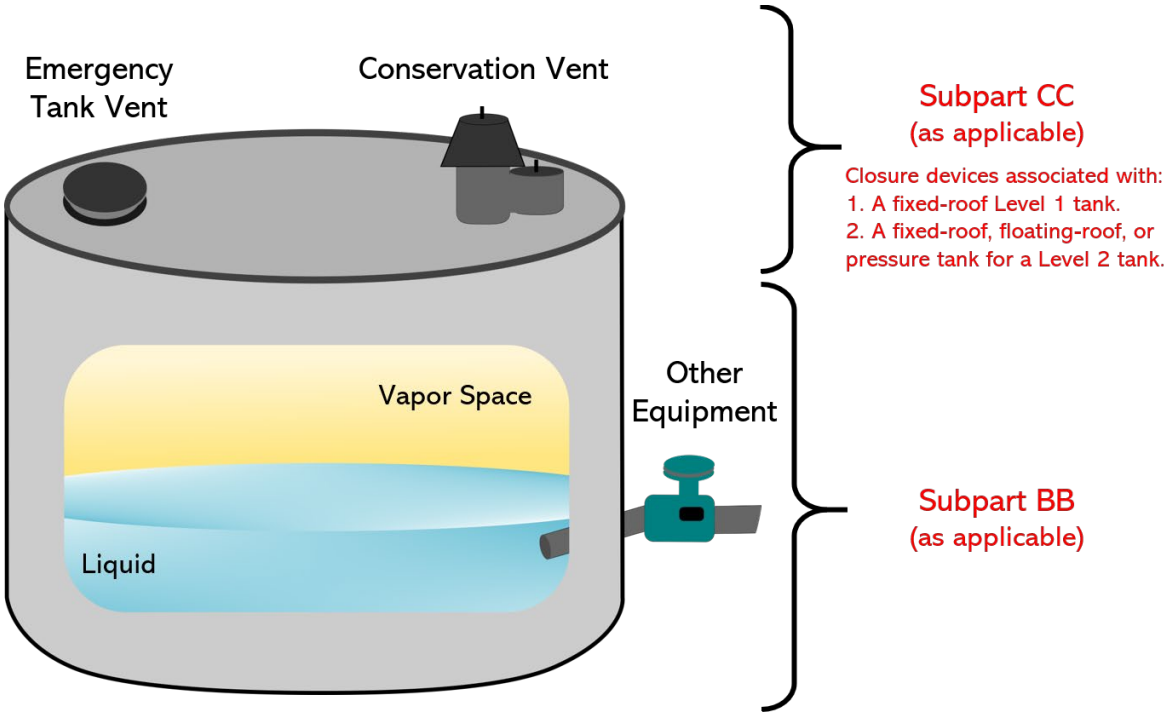

Figure 1: Illustration of EPA's interpretation of how RCRA Organic Air Emission Standards would apply.

For a tank with Level 1 air emission controls (e.g., fixed roof with closure devices), Subpart CC includes operational, inspection, monitoring, and repair requirements. The standards in 40 CFR 264.1084(c)(3) and/or 265.1085(c)(3) state that:

> Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:
>
> (i) […]
>
> (ii) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with *no detectable organic emissions* when the device is secured in the closed position... (emphasis added)
>
> (iii) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

The standards in 40 CFR 264.1084(c)(4) and/or 265.1085(c)(4) require an owner or operator to conduct visual inspections of the fixed roof and closure devices—on or before the date that the tank becomes subject to Subpart CC and annually thereafter[14]—to check for defects that could

[14] There is an exception if the tank cover is designated an "unsafe to inspect and monitor cover" per 40 CFR 264.1084(l) and/or 265.1085(l).

result in air pollutant emissions. If a defect is detected, then the owner or operator is required to make first efforts at repair within five calendar days and complete repair within 45 calendar days unless it meets delay of repair criteria.[15]

Conclusions

This memorandum clarifies that Subpart CC applies to closure devices in covers (e.g., spring-loaded pressure relief valve on a tank cover) because Subpart CC expressly defines and applies to "closure devices" in a cover. Specifically, closure devices associated with fixed-roof Level 1 tanks are subject to Subpart CC based on the requirements of 40 CFR 264.1084(c) and/or 265.1085(c). Similarly, closure devices associated with a fixed-roof, floating roof, or pressure tank for Level 2 tanks are subject to 40 CFR 264.1084(e) through (h) and/or 265.1085(e) through (h). Other equipment (as defined in 40 CFR 264.1031; e.g., a valve on the side of a tank) is subject to Subpart BB requirements, as applicable.

In implementing this guidance, permit writers may need to ensure permit conditions are consistent with this interpretation. EPA notes that authorized states may be more stringent. In addition, permit writers may use RCRA's omnibus authority to require Method 21 monitoring if it is determined that such a permit condition is necessary, at that specific facility, to protect human health and the environment. EPA and state inspectors may also use Method 21 to confirm suspected leaks.

If you have any questions about this memo, you may contact Lilybeth Colón at colon.lilybeth@epa.gov or Nadja Solis Marcano at solismarcano.nadja@epa.gov.

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[15] See 40 CFR 264.1084(c)(4)(iii) and (k), and/or 265.1085(c)(4)(iii) and (k).

Appendix A. Relevant Subpart CC Regulatory Definitions

- **Closure device** is defined as "a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening *in a cover* such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere." (emphasis added). A closure device may be detachable from the cover, manually operated, or automatically operated. 40 CFR 265.1081.

- **Cover** "means a device that provides a *continuous barrier over the hazardous waste* managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used." (emphasis added). 40 CFR 265.1081.

- **Safety device** is defined as "a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions *exclusively* to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of [Subpart CC], a safety device *is not* used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment..." (emphasis added). 40 CFR 265.1081.

- **Fixed roof** "means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit." 40 CFR 265.1081.

Appendix B. Relevant Subpart BB Regulatory Definition

- **Equipment** "means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this subpart." 40 CFR 264.1031.