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

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Webinar Objectives

- Provide information to tribes in support of EPA's consultation and coordination regarding the draft guidance memo: Applicability of RCRA Organic Air Emission Standards to Equipment and Closure Devices.
- Provide an overview of the regulatory provisions of the RCRA Organic Air Emission Standards found in Subparts AA, BB and CC.

Why is it Important to Regulate Air Emissions?

- Emissions from hazardous waste management include toxic organic compounds and ozone precursors.
- Releases of toxic, corrosive and/or ignitable hazardous waste can result in exposure to onsite workers and nearby communities.
- Cancer, other adverse health effects and environmental effects such as crop damage may result from exposure to these organic emissions.
- Organic air emissions can increase risk of fire or explosion.

Why Does RCRA Regulate Air Emissions Quality?

- Section 3004(n) of the Resource Conservation and Recovery Act (RCRA) requires the development of standards to monitor and control air emissions from hazardous waste treatment, storage and disposal facilities (TSDFs), **as necessary, to protect human health and the environment.**

RCRA Organic Air Emission Standards

- The RCRA Organic Air Emission Standards were designed to reduce organic air emissions from hazardous waste management through standards that encourage **routine facility maintenance.**
- The RCRA Air Emissions Standards and the Clean Air Act (CAA) regulations provide combined coverage.

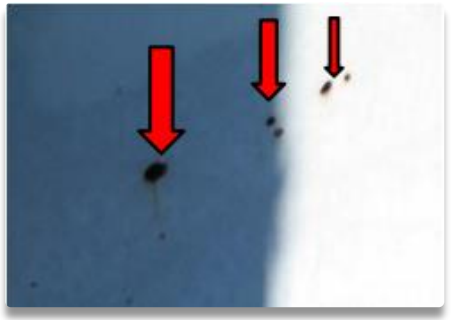
Reducing Hazardous Air Toxic Emissions at Hazardous Waste Facilities

- *"The Agency has found that air emissions violations associated with improper management of hazardous waste remains widespread."* [1]
- *"Releases from hazardous waste facilities can include releases of constituents known or suspected to cause cancer or birth defects."* [2]
- *"Organic emission from TSDFs managing hazardous wastes contribute to ambient ozone formation and increase cancer and other health risks."* [2]

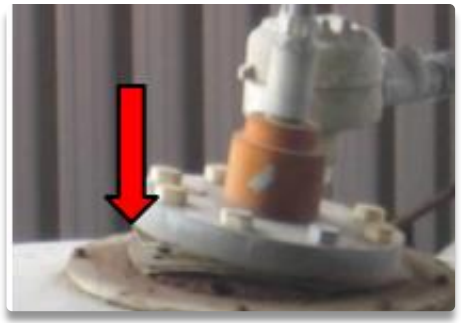
[1] FY2020-2023 National Compliance Initiatives, June 7, 2019

[2] 55 FR 25454 Preamble language, June 21, 1990

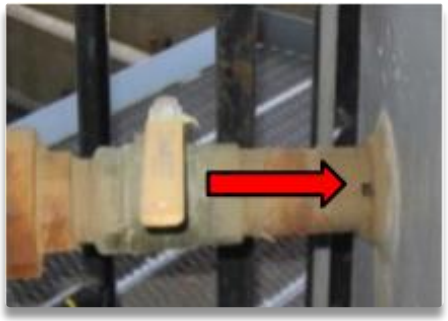
Examples of compliance concerns associated with equipment and tanks that EPA inspectors have found



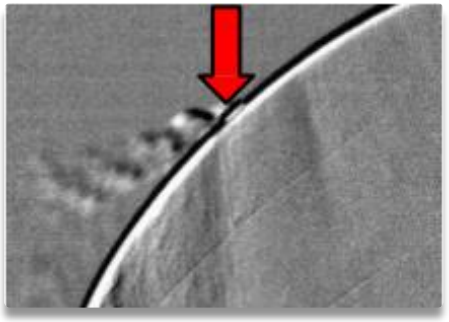
Holes in Tanks



Leaking Gaskets



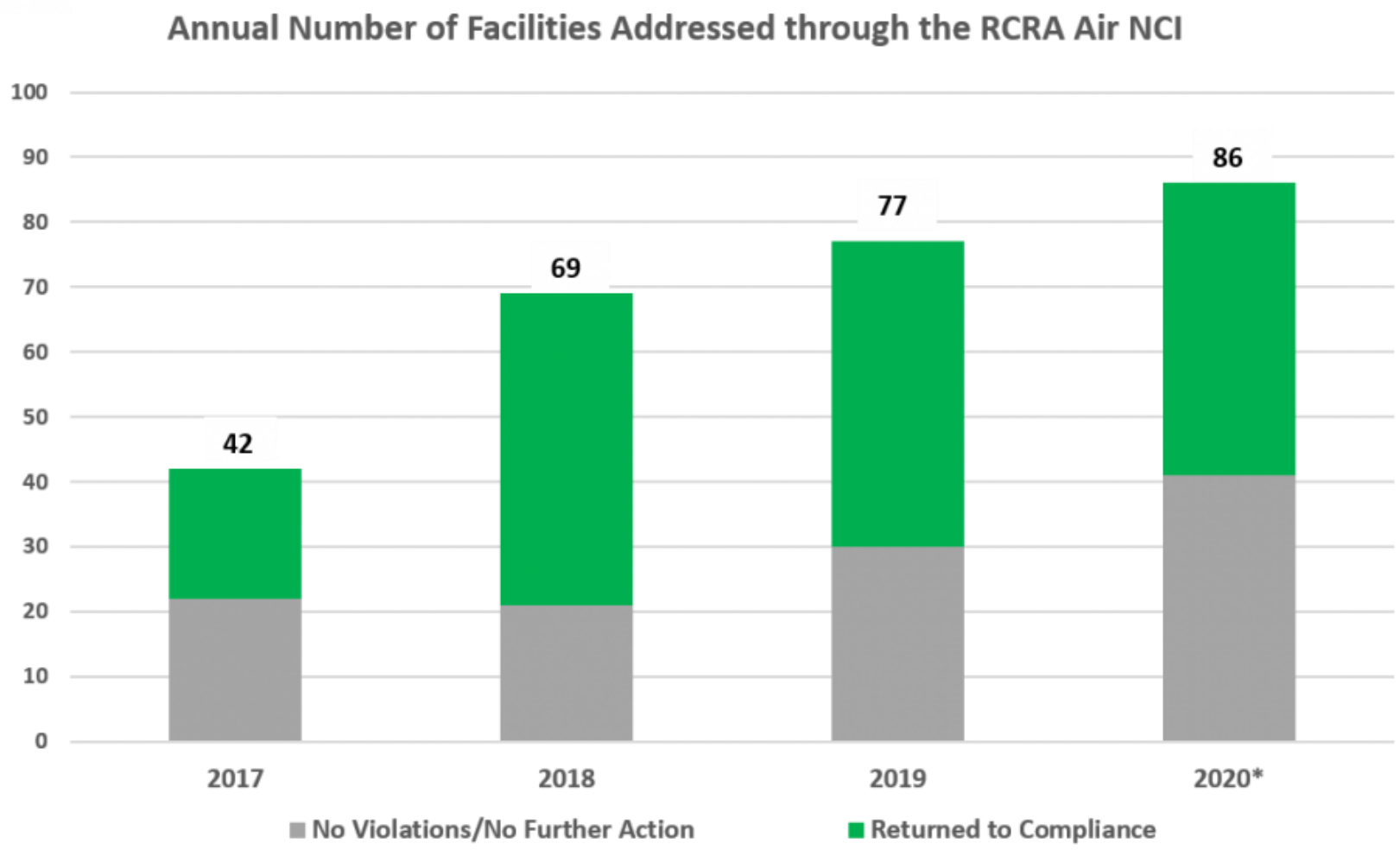
Leaking Pipes



Venting of Large Tanks (identified with forward-looking infrared cameras).

Example of a Tank Venting to the Atmosphere

Annual Number of Facilities Addressed through the RCRA Air NCI



Data Source(s): Totals were calculated based on data found in EPA data systems, ICIS and RCRAInfo.
Note: A facility that is potentially subject to RCRA air regulations is considered "addressed" if it is subject to an enforceable administrative order or civil judicial consent decree and has a return to compliance date, or has been inspected and found to have no significant violations.
*FY 2020 includes compliance determinations and addressing actions for off-site compliance monitoring activities/evaluations.

RCRA Organic Air Emission Standards

Subparts AA, BB, CC | 40 CFR 264/265

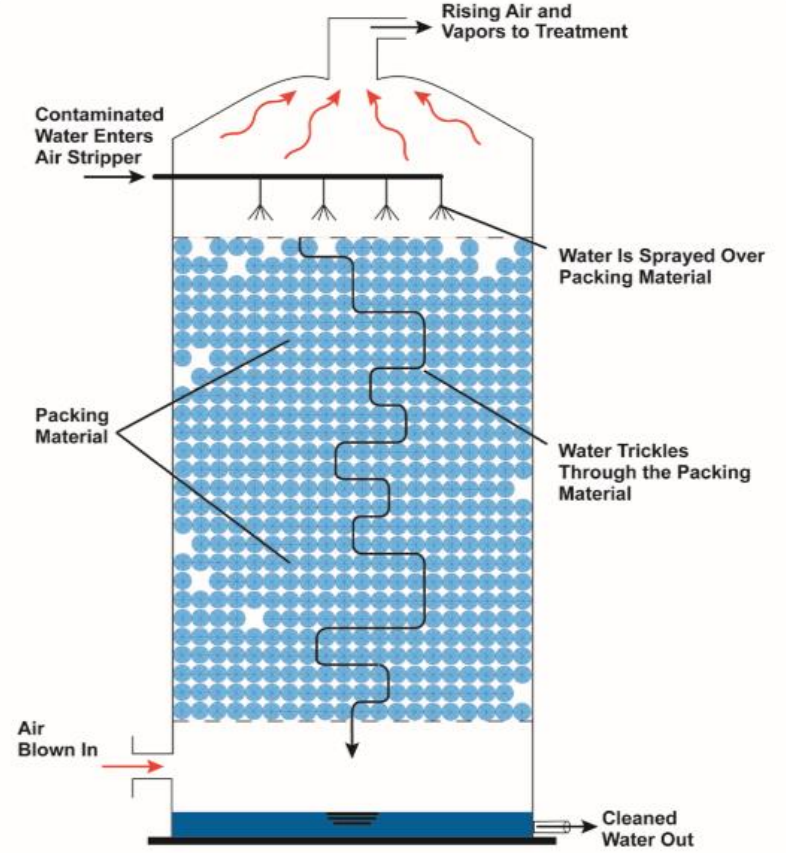
Applicability

The following types of units and associated equipment are subject to the RCRA Organic Air Emission Standards:

- Hazardous waste units subject to the permitting standards of 40 CFR Part 270 (i.e., permitted or interim status).
- Recycling units located at hazardous waste management facilities that store hazardous waste prior to recycling or are otherwise subject to the permitting standards of Part 270 (i.e., the facility has a RCRA permit or is in interim status).
- "90-day" large quantity generator accumulation tanks or containers per 40 CFR 262.17(a) (formerly § 262.34(a)).
- Miscellaneous hazardous waste management units subject to permitting standards, as deemed appropriate by the permitting authority.

Subpart AA – Process Vents

- Subpart AA applies to process vents associated with the following operations managing hazardous waste **with organic concentrations of at least 10 parts per million weight** (ppmw):
  - distillation,
  - fractionation,
  - thin-film evaporation,
  - solvent extraction, or
  - air or steam stripping.
- The owner or operator of a facility with the above process vents must either:
  - Reduce the total organic emissions from **affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 mg/yr (3.1 tons/yr)**; or
  - Reduce, by use of a control device, **total organic emissions from all affected process vents at the facility by 95 percent weight.**



Packed-Column Air Stripper

Subpart AA – Closed-vent System and Control Devices (cont.)

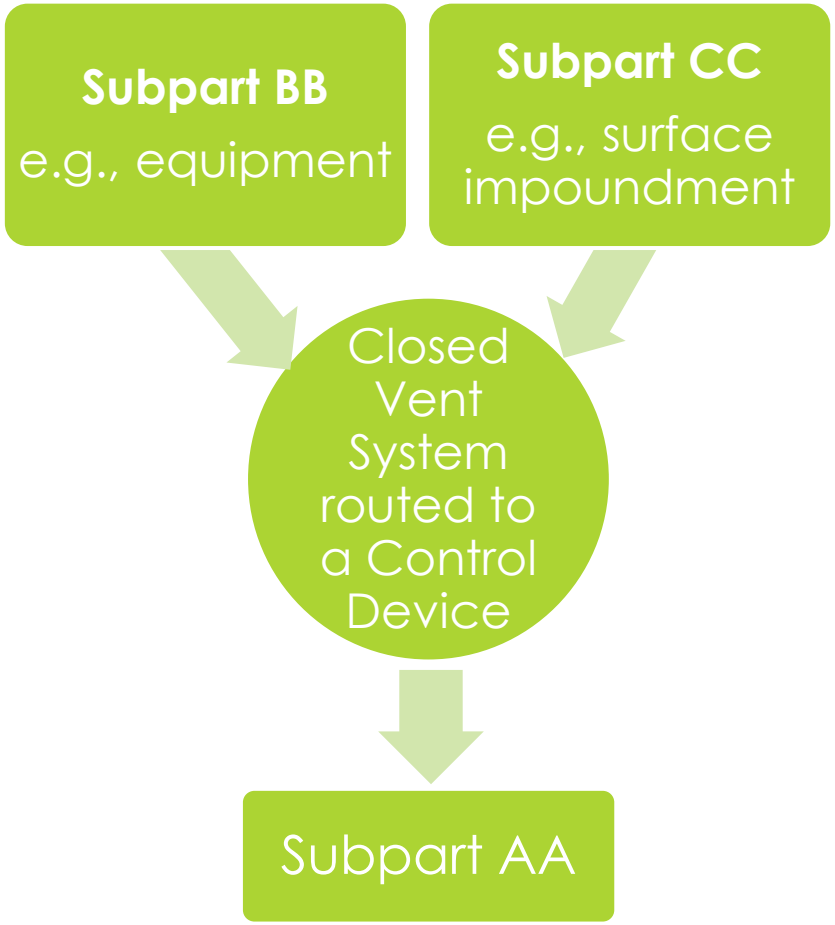
- Types of control devices include:
  - Condenser
  - Carbon absorber
  - Flare
  - Boiler
  - Vapor incinerator

Well Operating Flare – High Combustion Efficiency

Poorly Operating Flare/Over Steamed – Low Combustion Efficiency

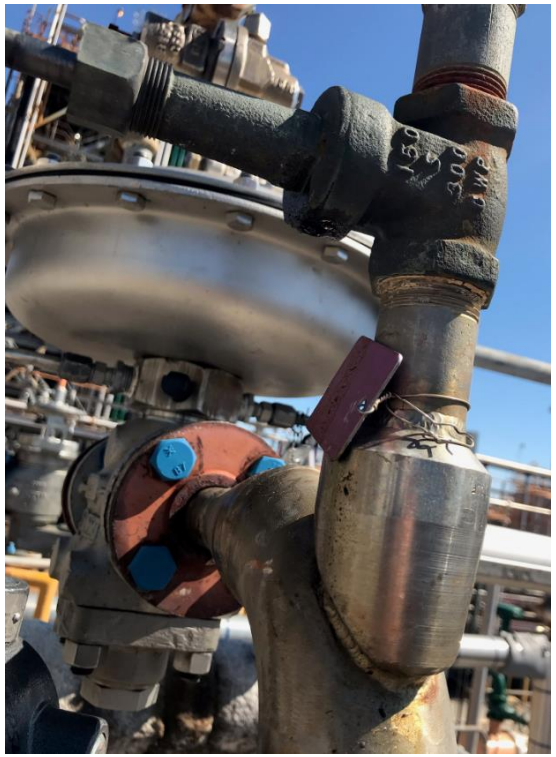
Subpart AA – Closed-vent System and Control Devices (cont.)

- In situations where equipment is connected to or equipped with a closed-vent system routed to a control device, Subpart BB refers the owner or operator of the relevant equipment to Subpart AA via 40 CFR § 264/265.1060(a).
- Similarly, Subpart CC refers the owner or operator of the relevant units to Subpart AA via 40 CFR § 264.1087(b) and (c)/265.1088(b) and (c).



Subpart BB – Equipment Leaks

- Subpart BB applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10% by weight for 300 or more hours per calendar year. 40 CFR § 264/265.1050
- Types of equipment regulated by Subpart BB include:
  - Pumps in light liquid service
  - Compressors
  - Pressure relief devices in gas/vapor service
  - Sampling connection systems
  - Open-ended valves or lines
  - Valves in gas/vapor service or in light liquid service
  - Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service and flanges and other connectors.



Subpart BB – Equipment Marking

- Each piece of equipment to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.
  - 40 CFR § 264.1050(d)
  - 40 CFR § 265.1050(c)

Subpart BB – LDAR Program

- A Leak Detection and Repair (LDAR) Program is a work practice designed to identify leaking equipment so that emissions can be reduced through repairs and recordkeeping.
- Requirements of an LDAR program for BB Equipment:
  - Identifying pieces of equipment, 40 CFR § 264/265.1050(d)
  - Leak definition standards, 40 CFR §§ 264/265.1052-1062
  - Monitoring, 40 CFR §§ 264/265.1052-1062
    - Note there may be other types of monitoring than Method 21 such as visual, audible, and olfactory (e.g., 40 CFR § 264/265.1058).
  - Repairing, 40 CFR §§ 264/265.1052-1061
  - Recordkeeping, 40 CFR § 264/265.1064

Subpart BB – Instrumentation and Method 21

- Leak detection and monitoring for subpart BB equipment must comply with Reference Method 21 (M21) in 40 CFR part 60 (CAA). 40 CFR §264/265.1063.
- M21 monitoring identifies leaks.
- Instruments such as the PID (photo ionization detector) and the FID (flame ionization detectors) must meet the performance criteria of M21.
- * M21 is also required in Subparts AA and portions of CC.

M21 Monitoring with a Flame Ionization Detector | Leaking level gauge

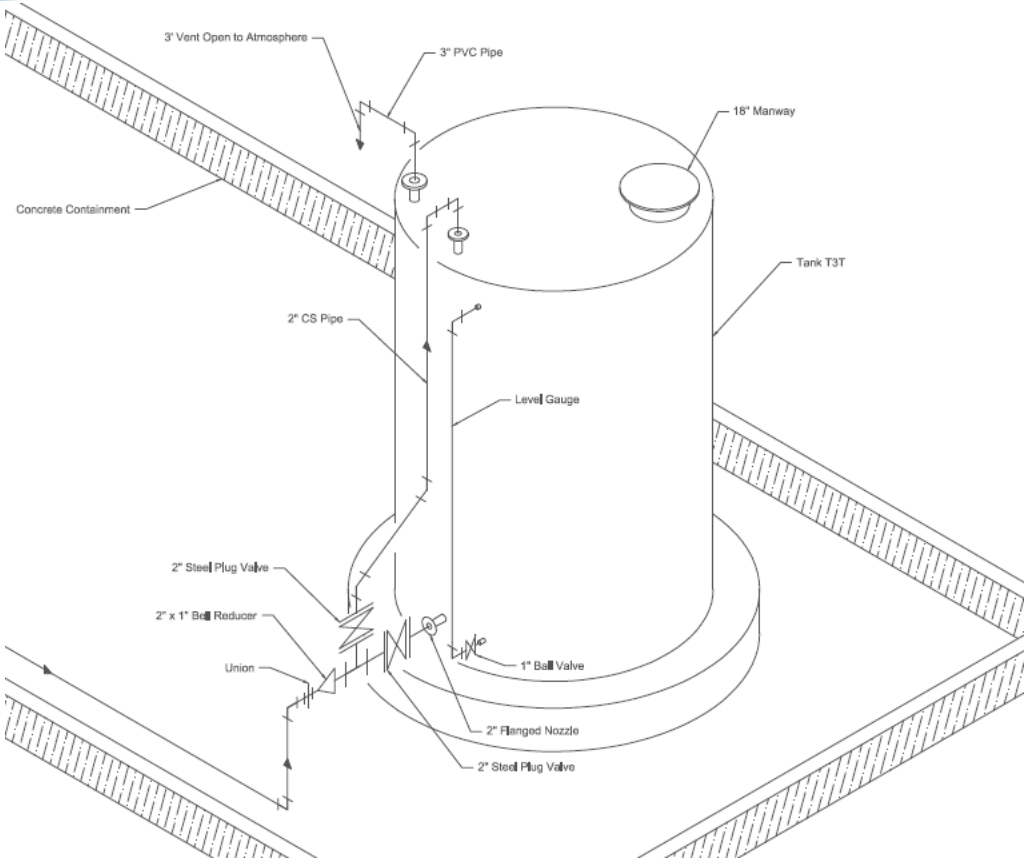
M21 Monitoring an Open-Ended Valve w/PID

Subpart BB – Recordkeeping

- Compliance is determined through inspections and recordkeeping. 40 CFR § 264/265.1064.
- **Facilities must record**, for each Subpart BB piece of equipment:
  - Equipment and unit ID;
  - Approximate location within the facility (ID the unit on the plot plan)
  - Indicate equipment type (valve, pump, Pressure Release Device, etc.)
  - Percent-by-weight total organics in the waste stream at the equipment;
  - State of HW at the equipment (gas/vapor, liquid); and
  - Method of compliance with the relevant equipment standard.
- When a leak is detected at a piece of equipment, there are requirements to mark with a weatherproof visible ID, identify date of leak, and attach to the leaking equipment.

Subpart CC – Tanks, Containers, Surface Impoundments (SI)

- Subpart CC applies to facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to 40 CFR parts 264/265 subparts I, J, or K.
- "90-day" accumulation tanks or containers per 40 CFR § 262.17(a) (formerly § 262.34(a)),
- Miscellaneous hazardous waste management units subject to permitting standards, as deemed appropriate.



Subpart CC Tank and Conservation Vent

Subpart CC – Tanks, Containers, SI (cont.)

- Subpart CC requires owners and operators of facilities to control emissions of volatile organic (VO) hazardous waste that is managed in tanks, containers, and surface impoundments, if the waste has a VO concentration of at least 500 ppmw at the point of generation.
- The specific air emission control requirements (e.g., type of air emission control, inspection, monitoring) depend on factors such as the size of the unit and maximum organic vapor pressure limit of the waste.
  - Tanks have two levels of controls
  - Containers have three levels of controls
  - Surface impoundments (SI) have two control options

Subpart CC – Recordkeeping Requirements

- The Subpart CC recordkeeping requirements found in 40 CFR § 264.1089/265.1090 are unit specific and include:
  - Unit IDs;
  - Date of inspections;
  - Location, description and date of detection of unit defect(s); and
  - Documentation describing the controls in place.

Subpart CC – Inspection and Monitoring Requirements

- § 264.1088/265.1089 Inspection and monitoring requirements.
  - (a) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subpart in accordance with the applicable requirements specified in § 264.1084/265.1085 through § 264.1087/265.1088 of this subpart.
  - (b) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by paragraph (a) of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under 40 CFR 264/265.15.

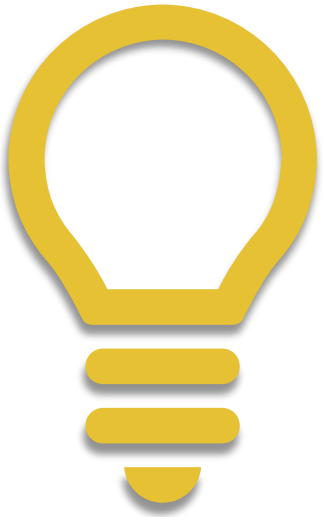
Example of Subpart CC Requirements for Tanks with Level 1 Controls

- The standards in 40 CFR § 264.1084(c)(4)/ 265.1085(c)(4) require an owner or operator to conduct visual inspections of the fixed roof and closure devices—initial and annually —to check for defects that could 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.

Key Takeaways

It is very important to carefully consider the applicability of the RCRA air rules.

- There are situations where a process vent, piece of equipment, or unit (e.g., tank) may be fully exempt from the requirements of the RCRA Air Rules, while other vents, equipment, or units may only be exempt from the specific air control standards but not the waste determination, recordkeeping and/or reporting requirements (e.g., facility claims exempt from subpart CC per 40 CFR 264.1082(c)(1)).
- Other RCRA provisions may also trigger the subparts AA, BB and CC requirements (e.g., remanufacturing hazardous secondary materials (40 CFR 261.4(a)(27)), operating a miscellaneous unit (40 CFR 264.601)).



Memorandum: Applicability of RCRA Organic Air Emission Standards to Equipment and Closure Devices

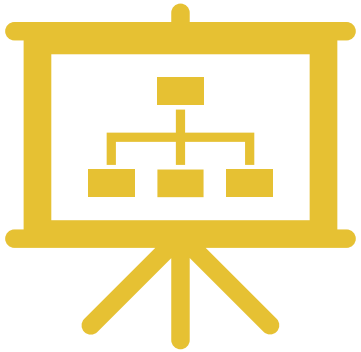
Subparts BB and CC | 40 CFR 264/265

Purpose of the Memorandum

- This memorandum would provide guidance to permit writers, inspectors and owner/operators of treatment, storage and disposal facilities (TSDFs) and to owners/operators of large quantity generators (LQGs) on determining whether equipment and/or closure devices associated with a hazardous waste unit (e.g., tank) fall under Subpart BB or Subpart CC of the Air Emission Standards.

Need for Issuing Memo

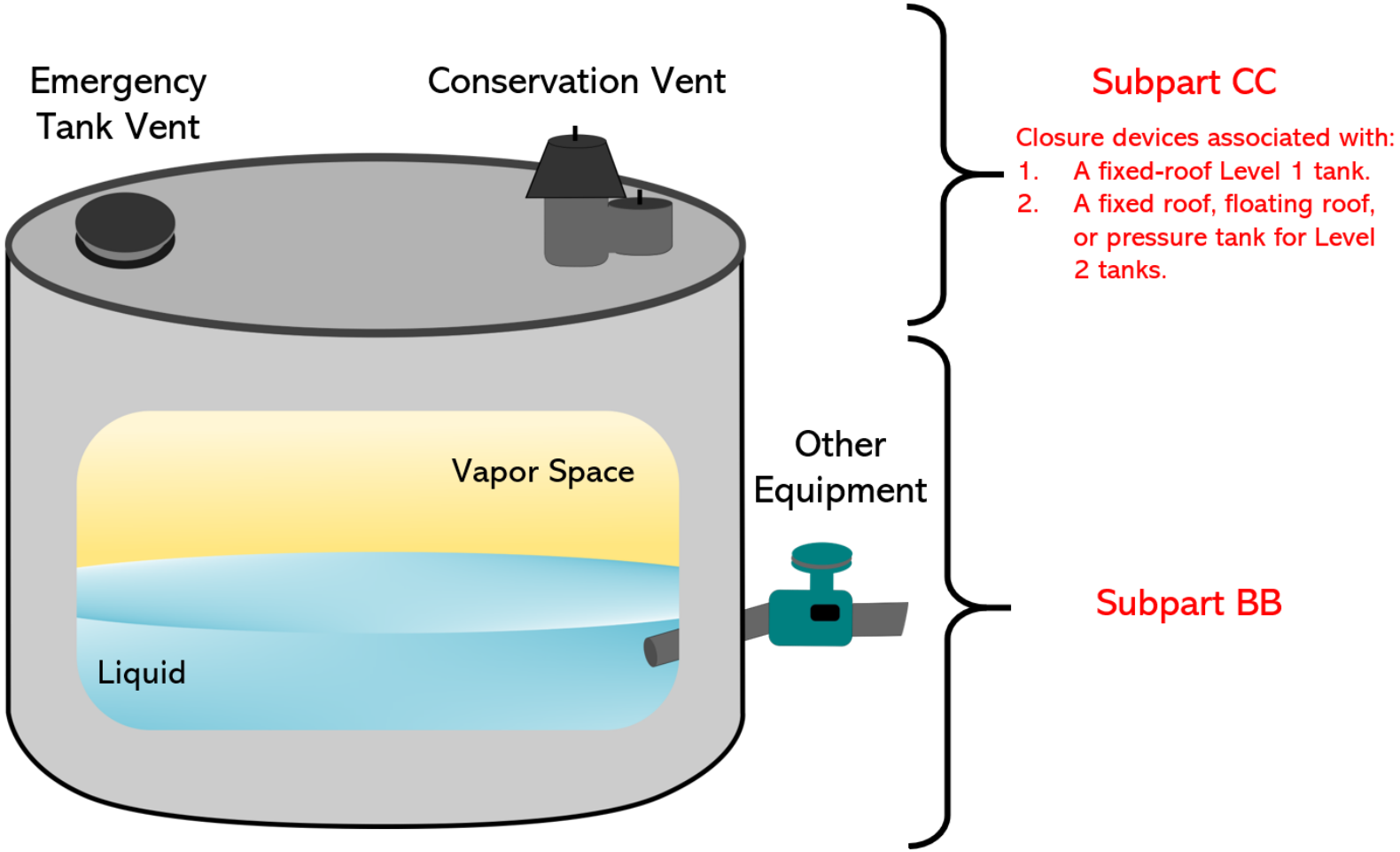
- There has been confusion within EPA, and to some extent the regulated community, regarding what equipment and/or closure devices are subject to 40 CFR 264/265 Subpart CC (e.g., tanks) versus 40 CFR 264/265 Subpart BB (i.e., equipment).
- Closure devices, which is the term used in Subpart CC, are similar to certain equipment, including valves and pressure relief devices, that are regulated by Subpart BB.
- Each subpart has a different scope, as well as requirements, for operation, inspection, monitoring, and repair. Thus, it is important for implementation and enforcement to clarify which subpart applies to certain equipment and/or closure devices associated with a hazardous waste unit, e.g., tank.



EPA's Interpretation and Rationale

- EPA's proposed interpretation is that Subpart CC applies to closure devices because the Subpart CC regulations, which are applicable to tanks, containers, or surface impoundments, expressly define and apply to "closure devices."
- The regulations 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 C.F.R. 265.1081.

Illustration of EPA's Proposed Interpretation



Conclusion

- This memorandum would clarify the applicability of Subpart CC to closure devices because the air emission controls are associated with a Subpart CC-regulated tank, container, or surface impoundment.
- In implementing this interpretation, permit writers may need to ensure permit conditions are consistent with the interpretation set forth herein, unless the authorized state chooses to be more stringent.

Tribal Implications and Consultation

- The consultation process for the memorandum is being conducted in accordance with the EPA Policy on Consultation and Coordination with Indian Tribes (https://www.epa.gov/tribal/forms/consultation-andcoordination-tribes). However, EPA does not expect that the memorandum would have tribal implications as specified in Executive Order 13175.
- If you would like to consult with EPA, please contact Lilybeth Colón by phone at (703) 308-2392 or by email at colon.lilybeth@epa.gov. The deadline to request formal consultation is July 16, 2021.

Public Comment

- The EPA plans to post the draft memorandum on the EPA website and accept public comments for 60 days as early as July 2021.
- Tribes are also encouraged to submit comments in writing during the public comment period by email at RCRApost@epa.gov.
- All written comments must be received no later than 60 days after the start of the public comment period.

Questions?