United States Environmental Protection Agency | RCRA Programs Branch | Region IV Atlanta, GA

CAA/RCRA Air Rules | 27 November 2000

EPA Region 4

General Inspection Guidance for Waste Management Units Requiring Air Emission Controls Under RCRA Air Standard Subpart CC

RCRA HAZARDOUS WASTE AIR EMISSION STANDARDS

General Inspection Guidance for Waste Management Units Requiring Air Emission Controls under RCRA Air Standard Subpart CC

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Introduction

This document is intended to provide guidelines for conducting an inspection of affected facilities for compliance with RCRA subpart CC Standards. The scope is limited to those waste management units (i.e. tanks, surface impoundments, and containers) that require air emission controls under the rule. The material contained in this document is intended to identify and list those points that require the inspectors consideration when planning and performing onsite facility inspections. The material is also generally limited to visual and recordkeeping evaluations of regulated items, i.e., no source testing or other measurements are required of the inspector to assess compliance. Although not addressed in this document, discussion of emission measurement techniques and the associated monitoring equipment may be found in other EPA reference documents such as the "Benzene Equipment Leak Inspection Manual" (Reference EPA 340/1-90-001). The visual inspection considerations focus on the assessment of regulated equipment using key inspection points or visible criteria while following the necessary safety guidelines. The recordkeeping inspection considerations focus on the evaluation of operating conditions and assessment of facility monitoring, and routine owner/operator inspection and recordkeeping requirements.

The inspection guidance is organized by equipment item. This format prevents duplication of information and ensures that items are not overlooked, thereby saving time and eliminating backtracking. Suggested procedural steps for evaluating specific equipment are given to guide the inspector through the inspection. Concise, complete documentation of inspection results is necessary and should be made at the inspection site. Inspectors should be aware of the OSHA confined space entry regulation that became effective on April 15, 1993 (29 CFR 1910.146). The regulation defines confined spaces and requires permits be issued and certain safety measures followed.

Record inspection checks for this rule are presented in a separate document. They are intended to augment information obtained during the Visual Inspection. In some cases when health and safety considerations preclude use of visual inspection techniques, facility records will be the only source of compliance documentation available.

In preparation for the upcoming inspection, the inspector should review the facility's file, including all applicable permits.

The following equipment will be necessary for a full inspection:

Non-sparking flashlight

Camera

Respirator(s)

SCBA

Hard hat

Safety shoes

Calculator

Copy of Regulation

Binoculars

Extra batteries and film for camera

Photo log

Dowels to measure gaps

Employee identification /credentials

Facility map – if available

INSPECTION GUIDANCE FOR
RCRA HAZARDOUS WASTE OPERATIONS

General Information

1. Name of corporation, company, or individual owner: _____

   _____

2. Mailing Address: _____

   _____

   _____

3. Facility Address: _____

   _____

   _____

4. Source Number (permit number, date of permit, permit expiration, etc.): _____

   _____

   _____

5. Name and Title of Contact: _____
6. Telephone Number: _____

Inspection Information

7. Date of Inspection, Time of Day, Weather Conditions:

8. Name and Title of Government Official Conducting Inspection:

9. Pre-inspection interview:

10. Post-inspection interview:

11. Additional comments:

12. Photo log:

13. Sketch of Facility:

14. Follow-up activities:

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
1. General	
What is the design capacity of the tank?	
Is the tank required to meet Tank Level 1 or 2 controls?	
Do the tanks exhibit any signs of corrosion?	
Is there a pressure gauge? What is the pressure reading?	
2. Level 1 [§264.1084(c) or 265.(1085(c)]	
If Level 1, what Tank Level 1 controls requirements does the tank meet:	
• Determine maximum HAP vapor pressure using procedures specified in §264.1083(c) or §265.1084(c) before the first time the off-site material is placed in the tank.	
• Perform a new determination for changes that could potentially increase the maximum HAP vapor pressure to a level that is equal to or greater than levels specified in §264.1084(b)(1)(i) or §265.1085(b)(1)(i) for the specific tank design capacity category.	
Is the tank equipped with a fixed roof with each closure device secured in the closed position?	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS [§264.1084 or 265.1085]

Inspection Consideration	Notes
Check the tank for any cracks, holes, or gaps in the roof sections or between the roof and the tank wall. Also, check for any broken, cracked, or damaged seals or gaskets on closure devices, as well as any missing hatches, access covers, caps or other closure devices.	
Perform initial inspection on start-up. Thereafter, inspect the tank at least once every year.	
3. Level 2 [§264.1084(d) or §265(1085(d)]	
Tanks that may be used to meet Tank Level 2 controls:	
• A fixed-roof tank equipped with an internal floating roof as specified in §264.1084(e) or §265.1085(e)	
• A tank equipped with an external floating roof as specified in §264.1084(f) or §265.1085(f)	
• A tank equipped with a fixed roof vented through a closed-vent system to a control device as specified in §264.1084(g) or §265.1085(g)	
• A pressure tank designed and operated as specified in §264.1084(h) or §265.1085(h)	
• An enclosed tank that is vented through a closed-vent system to an enclosed combustion control device as specified in §264.1084(i) or 265.1085(i)	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
4. Fixed Roof with an Internal Floating Roof [§264.1084(e) or §265.1085(e)]	
Visually determine that the tank is a fixed-roof tank with an internal floating roof. Is the roof a separate cover or part of the tank structural design? What materials are used in the construction of the roof?	
Inspect the periphery of the floating roof and its closure devices for possible leaks in the shell, valves, flanges, and pumps. Note any liquid accumulations from tank appurtences or evidence of corrosion especially on the tank shell or roof.	
Inspect the fixed roof for possible visible cracks, holes, gaps, or other open spaces between roof sections or tank wall.	
What is the maximum organic vapor pressure of the hazardous waste in the tank? What is the tank's normal organic vapor pressure? Is there a pressure gauge on the tank for continuous readout?	
What are the maximum and minimum flow-weighted annual average volatile organic contents of the hazardous waste streams managed in the tank?	
What is the design capacity of the tank? What is the actual volume held in the tank?	
What is the withdrawal/filling schedule for the tank? When was the tank last emptied and refilled?	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
Visually inspect the internal floating roof components through openings on the fixed-roof every 12 months; inspect primary seal, secondary seal, gaskets, slotted membranes, and sleeve seals each time the tank is emptied and degassed and at least every 10 years.	
5. Fixed Roof Tank Vented to A Control Device	
Is the fixed roof tank equipped with a closed-vent system vented to a control device?	
What is the pressure in the vapor headspace underneath the fixed roof? Is it greater than or less than atmospheric pressure?	
If the pressure in the vapor headspace is greater than the atmospheric pressure then does the tank operate with no detectable organic emissions?	
If the pressure in the vapor headspace is less than the atmospheric pressure then are all openings on the tank equipped with closure devices secured in the closed position?	
Inspect the fixed roof for possible visible cracks, holes, gaps, or other open spaces between roof sections or tank wall.	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
6. Closed-Vent System	
Is there a closed-vent system associated with the fixed roof tank?	
Visually inspect the closed-vent system. Note visible gaps, holes, or corrosion spots seen in the ductwork of the closed-vent system.	
Are openings which are not vented to a control device equipped with a closure device secured in the closed position?	
7. Control Device	
Is there a control device connected to the closed-vent system?	
What type of control device is used?	
Is the control device operational?	
Check piping valves and fittings for visible leaks.	
What type of continuous monitoring device is used? Is the device operational? What parameter is the device monitoring? Note level monitored and compare with design levels from facility reports during record inspection.	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
8. External Floating Roof (EFR)	
Visually inspect the condition of the external floating roof. Note the condition (corrosion free, small pits in surface, pools of standing liquid, visible corrosion spots, etc.).	
Confirm that the floating roof is floating on the liquid surface (except when supported by the leg supports).	
Determine that the floating roof is equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. (The lower seal is the primary seal, and the upper seal is the secondary seal.)	
Determine that each opening in the floating roof is equipped with a closure device. Visually inspect for cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.	
Visually inspect after installation; thereafter, at least once every year.	
9. Closure Device	
Determine that a closure device (seal) is between the wall of the storage tank and the roof edge. This can be performed for the secondary seal by visual inspection from the platform.	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
9a. Primary Seal	
Determine that the seal is either a metallic shoe seal or a liquid-mounted seal. Check that the seal is continuous around the tank.	
Determine that the gaps between the wall and seal do not exceed 212 cm^2 per meter of vessel diameter and the gap widths do not exceed 3.8 cm.	
Inspect and measure gaps between the wall and seal within 60 days after initial operation; thereafter, at least once every 5 years. (Before inspection, operator shall notify the Administrator as specified in §264.1084 or §265.1085).	
For metallic shoe seals, check that there is a flexible coated fabric that spans the space between the metal shoe and the vessel wall. Determine that one end of the metallic shoe seal extends into the stored liquid and the other extends a minimum vertical distance of 61 cm (24 inches) above the liquid surface.	
Identify any corrosion, holes, tears or other openings in the shoe, flexible seal fabric, or seal envelope.	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
9b. Secondary Seal	
Determine that a secondary seal is installed above the primary seal and covers the annular space between the floating roof and the wall of the tank.	
Determine that the gaps between the wall and seal do not exceed 21.2 cm^2 per meter of tank diameter and the gap widths do not exceed 1.3 cm.	
Inspect and measure the gaps between the wall and seal within 60 days after initial operation; thereafter, at least once every year. Perform measurements as specified in §264.1084(e)(3)(iv) or §265.1085(e)(3)(iv).	
Look for any corrosion, holes, tears, or other openings in the shoe, flexible seal fabric, or seal envelope.	
10. Automatic Bleeder Vents	
Observe that the vents are closed during normal operations (exemptions for emptying or refilling).	
If possible, observe a tank filling operation. While floating the roof off the leg supports, observe whether the automatic bleeder vents open. (Vents may be open only when the roof is being floated off the tank bottom during filling or when the roof is supported on the legs during draining operation.)	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
11. Rim Space Vents	
Visually determine if the rim space vents are closed during normal operation (exceptions only when roof is not floating or when pressure beneath the rim exceeds manufacture's recommended setting).	
If possible, observe whether the rim space vents are open when the roof is being floated off the leg supports. (Rim space vents may be open only when the roof is being floated off or landing on the roof leg supports during filling or draining operations).	
12. Emergency Roof Drain/Sampling Penetrations	
Determine that the emergency roof drain as well as any penetration of the internal floating roof for the purpose of sampling is covered with a slotted membrane fabric. Does the fabric cover at least 90 percent of the opening? Were actual measurements or visual estimations used for this determination?	

GUIDANCE FOR VISUAL INSPECTION OF STORAGE TANKS
[§264.1084 or 265.1085]

Inspection Consideration	Notes
13. Deck Openings	
Confirm by visual inspection that each opening in the external floating roof deck is equipped with a gasketed cover, seal, or lid. Without opening the lid or cover, visually inspect the visible portion of any seal or gasket. Does the seal or gasket appear worn, torn, shredded, ripped, or otherwise misaligned to prevent forming a vapor-tight seal?	
Are all deck openings closed? (The only exception is when the device is in actual use.)	
14. Pressure Tank	
Are all openings equipped with a closure device, and is the tank designed to operate with no detectable organic emissions?	
15. Tank in Enclosure Vented to a Combustion Control Device	
Is the tank within an enclosure which meets the criteria for a Permanent Total Enclosure?	
Is the enclosure vented through a closed-vent system to an enclosed combustion control device (vapor incinerator, boiler, or process heater) which meets the requirements of §264.1033 or §265.1033?	

GUIDANCE FOR VISUAL INSPECTION OF SURFACE IMPOUNDMENTS [§264.1085 or §265.1086]

Inspection Consideration	Notes
1. General	
Observe if the surface impoundment has a cover. Is it a floating membrane cover or a cover that is vented through a closed-vent system to a control device?	
Visually inspect cover and openings such as access hatches, sampling ports, and gauge wells. They should be covered completely and free from cracks, gaps, holes, or open spaces. Does the cover form a continuous barrier over the entire surface area of the liquid?	

GUIDANCE FOR VISUAL INSPECTION OF SURFACE IMPOUNDMENTS [§264.1085 or §265.1086]

Inspection Consideration	Notes
2. Cover and Openings	
If a floating membrane cover, is the cover floating on the liquid surface? Inspect floating membrane following installation; thereafter, at least once each calendar year (see §264.1085(g) or §265.1086(g) for alternative inspection requirements).	
Is each opening closed and in the sealed position unless sampling, removal, or equipment inspection, maintenance, repair, or sludge removal is occurring?	
If floating membrane cover is equipped with an emergency cover drain, the drain cover can be a slotted membrane that covers 90 percent of the opening or a flexible fabric sleeve seal?	
What are the construction of the cover materials? If a FMC fabricated of HDPE, what is the thickness of the HDPE, >2.5 mm?	
If FMC is not HDPE, does the material or composite have (1)organic permeability properties equivalent to HDPE and (2)chemical and physical properties to maintain the material integrity for the intended service life?	

GUIDANCE FOR VISUAL INSPECTION OF SURFACE IMPOUNDMENTS [§264.1085 or §265.1086]

Inspection Consideration	Notes
3. Vented to a Control Device	
Visually inspect the enclosure for leaks. Is each cover seal, access hatch, or other openings free from cracks or gaps, closed and properly sealed?	
Inspect at initial start-up. After initial inspection, visually inspect at least once per year for defects that result in air emissions, (see §264.1085(g) or §265.1086(g) for alternative inspection requirements).	
Is there a pressure gauge? What is the pressure reading?	
What are the construction materials of the cover and closure devices (consider organic vapor permeability, liquid contact, exposure to the elements, and operating practices)?	
If a regulated-material is in the surface impoundment, cover and closure devices should be secured in the closed position with vapors underneath vented to the control device, except as specified in §264.1085(d)(2) or §265.1086(d)(2).	

GUIDANCE FOR VISUAL INSPECTION OF CONTAINERS [§264.1086 or §265.1087]

Inspection Consideration	Notes
1. General	
What is the design capacity of the container?	
Is the hazardous waste managed in the container a "light material" as defined in the rule (§265.1081)?	
Is the container used for a waste stabilization process?	
Is the container required to meet Container Level 1, 2, or 3 controls?	
Does the container meet applicable U.S. Department of Transportation Regulations?	
Does the container exhibit any signs of corrosion?	
Is there a pressure gauge? What is the pressure reading?	
2. Level 1	
If Level 1, what Level 1 alternative does the container meet:	
• DOT	
• Cover and closure device	
• Organic vapor-suppressing barrier	

GUIDANCE FOR VISUAL INSPECTION OF CONTAINERS [§264.1086 or §265.1087]

Inspection Consideration	Notes
3. Level 2	
If Level 2, what Level 2 alternative does the container meet:	
• DOT	
• No detectable emissions (see §264.1086(g) or §265.1087(g))	
• Vapor tight	
4. Level 3	
If Level 3, what Level 3 alternative does the container meet:	
• Enclosure vented to control device	
• Vented directly to control device	
Is the enclosure designed/operated to meet criteria for a permanent total enclosure (40 CFR 52.741)	
<u>Treatment of Containerized Waste (waste stabilization)</u> Confirm that the opening of a container for treatment purposes is performed under a cover or enclosure equipped with a closed-vent system routing all vented container vapors to a control device, or the container itself is vented directly through a closed-vent system to a control device.	
5. Cover, Lids and Openings	
Observe that the container covers and all openings including bungs, hatches, and sampling ports are closed.	

GUIDANCE FOR VISUAL INSPECTION OF CONTAINERS [§264.1086 or §265.1087]

Inspection Consideration	Notes
6. Seals, Gaskets and Latches	
Observe that each opening on the container is sealed in the closed position with a gasket and latch except during waste loading, removal, inspection, or sampling.	
7. Inspection Schedule	
For containers received already containing hazardous waste which are not to be emptied within 24 hours of acceptance, an inspection must be performed on or before the time the container is accepted.	
Inspection should be done on containers at least once every 12 months.	

GUIDANCE FOR VISUAL INSPECTION OF INDIVIDUAL TRANSFER SYSTEMS

Inspection Consideration	Notes
1. General	
Visually confirm that the transfer system has continuous hard-piping with joints and seams between sections permanently or semi-permanently sealed. Is the hazardous waste exposed to the atmosphere.	
2. Cover and Closure Devices	
Visually check that all covers and closure devices form a continuous barrier over the entire surface area of the off-site material except for openings at the inlet and outlet to the transfer system. (Inlet and outlet openings shall be of minimum size).	
Visually inspect covers and closure devices for cracks, holes, gaps, or other open spaces between cover section joints or the interface of the cover edge and its mounting. (When transfer system is buried partially or entirely underground, inspection is required only for those portions of the cover that extend to or above the ground).	
Are covers closed and secured in the closed position except at inlet and outlet openings to the transfer system with no visible cracks, gaps, or other spaces in the closure device or between the perimeter of the opening and the closure device?	
What is the construction material of the cover and closure device? Will it minimize exposure of off-site material?	

GUIDANCE FOR VISUAL INSPECTION OF INDIVIDUAL TRANSFER SYSTEMS

Inspection Consideration	Notes
Are covers maintained in the closed and sealed position when hazardous material is in the system except when the opening is used for waste sampling, removal, inspection, maintenance, or repair?	