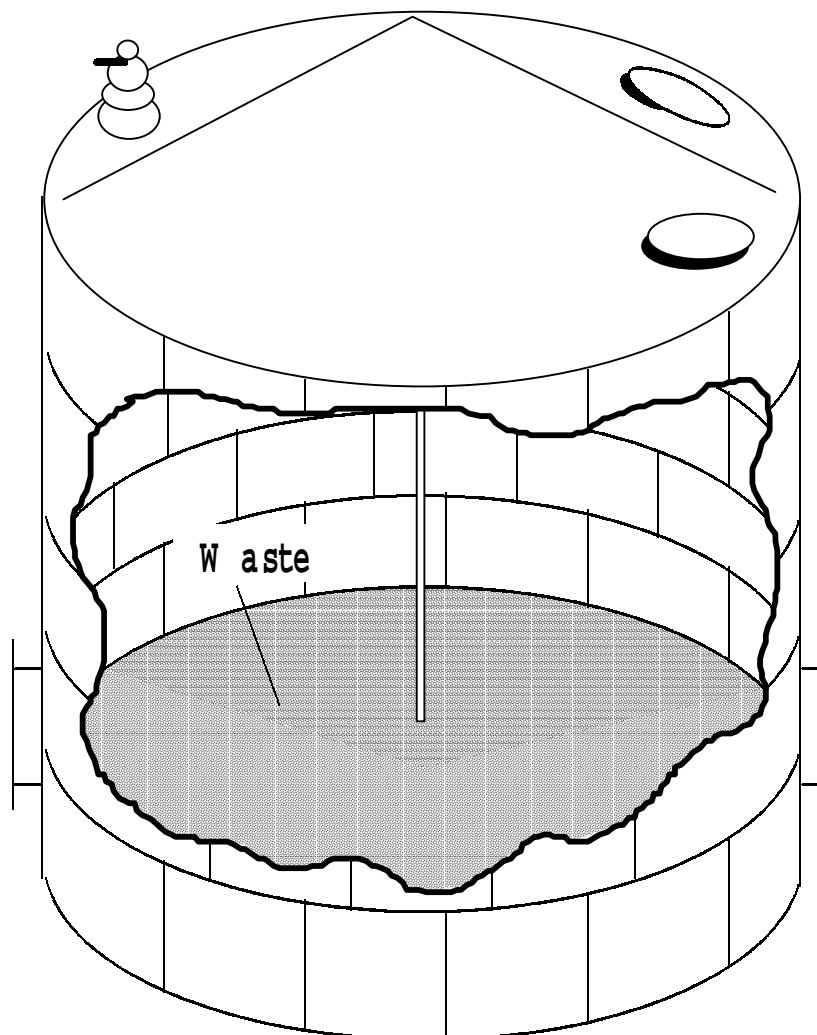




U.S. EPA REGION 7 ORGANIC AIR EMISSIONS ASSISTANCE

RCRA SUBPART CC GUIDANCE MODULE FOR TANK LEVEL 2 CONTROLS

FIXED ROOF TANK CONNECTED TO A CLOSED-VENT SYSTEM VENTED TO A FLARE



U.S. EPA REGION 7

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FIXED ROOF TANK CONNECTED TO A CLOSED-VENT SYSTEM VENTED TO A FLARE

FORWARD

The purpose of this Guidance Module is to present information by which affected facilities can achieve better compliance with environmental regulations. This Guidance Module was produced by TechLaw, Inc. under contract to the U.S. Environmental Protection Agency (U.S. EPA) Region 7 for the Compliance Assurance and Enforcement Division of U.S. EPA Region 7.

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U.S. EPA REGION 7

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1.0 INTRODUCTION

1.1 About this Guidance Module

“Tanks which meet either Tank Level 1 or Tank Level 2 control criteria may use a closed-vent system vented to a flare for compliance with Subpart CC regulations.”

This Guidance Module is a compliance assistance tool for environmental managers responsible for complying with RCRA Subpart CC standards. Subpart CC standards may apply to tanks, containers, or surface impoundments which manage hazardous waste. Compliance with the Subpart CC standards is based on proper knowledge of the waste, good waste management practices, inspection and maintenance of equipment in good repair, and the appropriate application of acceptable control options.

This Guidance Module has been prepared for environmental managers, owners, and operators who are responsible for applying Subpart CC standards to a fixed roof tank connected to a closed-vent system vented to a flare. **Tanks which meet either Tank Level 1 or Tank Level 2 control criteria may use a closed-vent system vented to a flare for compliance with Subpart CC regulations.** Information on applicability, waste determination, monitoring and inspection requirements, waste transfer requirements, repair requirements, recordkeeping requirements and permitting is presented in this Guidance Module.

The inspection, management, and permitting requirements of containers and surface impoundments, and tanks that apply controls other than a closed-vent system and a flare are not discussed in this Guidance Module. Please refer to the *U.S. EPA Region 7 Environmental Manager's Guidance Handbook* (December 1998) for information on the inspection, management, and permitting of these types of equipment. Other federal, state, and local regulations which limit the amount of volatile organics (VO) that can be emitted from a unit are not covered in this Guidance Module.

The Subpart CC standards were initially published on December 6, 1994 (59 FR 69826). Since that time U.S. EPA has published several FEDERAL REGISTER documents to amend or clarify the December 6, 1994 Final Rule. This Guidance Module considers applicable FEDERAL REGISTER documents through the December 8, 1997 (62 FR 64636) corrections and clarifications to the Final Rule.

1.2 General Subpart CC Requirements

Subpart CC standards were published to reduce organic air emissions from tanks, surface impoundments, and containers. The standards allow for controlling organic air emissions from affected equipment by using an acceptable control device, by

treating the waste, or by meeting one of various other design or regulatory requirements included in the standard.

Units which contain hazardous waste that is treated to reduce the VO concentrations to below certain specified limits are exempt from the Subpart CC standards. The acceptable organic treatment methodologies and the required treatment limits are presented in 40 CFR 264.1082(c)(2)(i) to (ix) and 265.1083(c)(2)(i) to (ix) of the Subpart CC standards. These treatment alternatives are discussed in the *U.S. EPA Region 7 Environmental Manager's Guidance Handbook* (December 1998).

Subpart CC standards require that waste determinations be conducted to determine the VO concentration of the waste, to ensure that treatment conditions specified in the standards are met, to determine if equipment is operating with no detectable emissions, and to determine the maximum organic vapor concentration in a tank. Waste determinations are described in 40 CFR 265.1084 and in the *U.S. EPA Region 7 Environmental Manager's Guidance Handbook* (December 1998).

2.0 APPLICABILITY

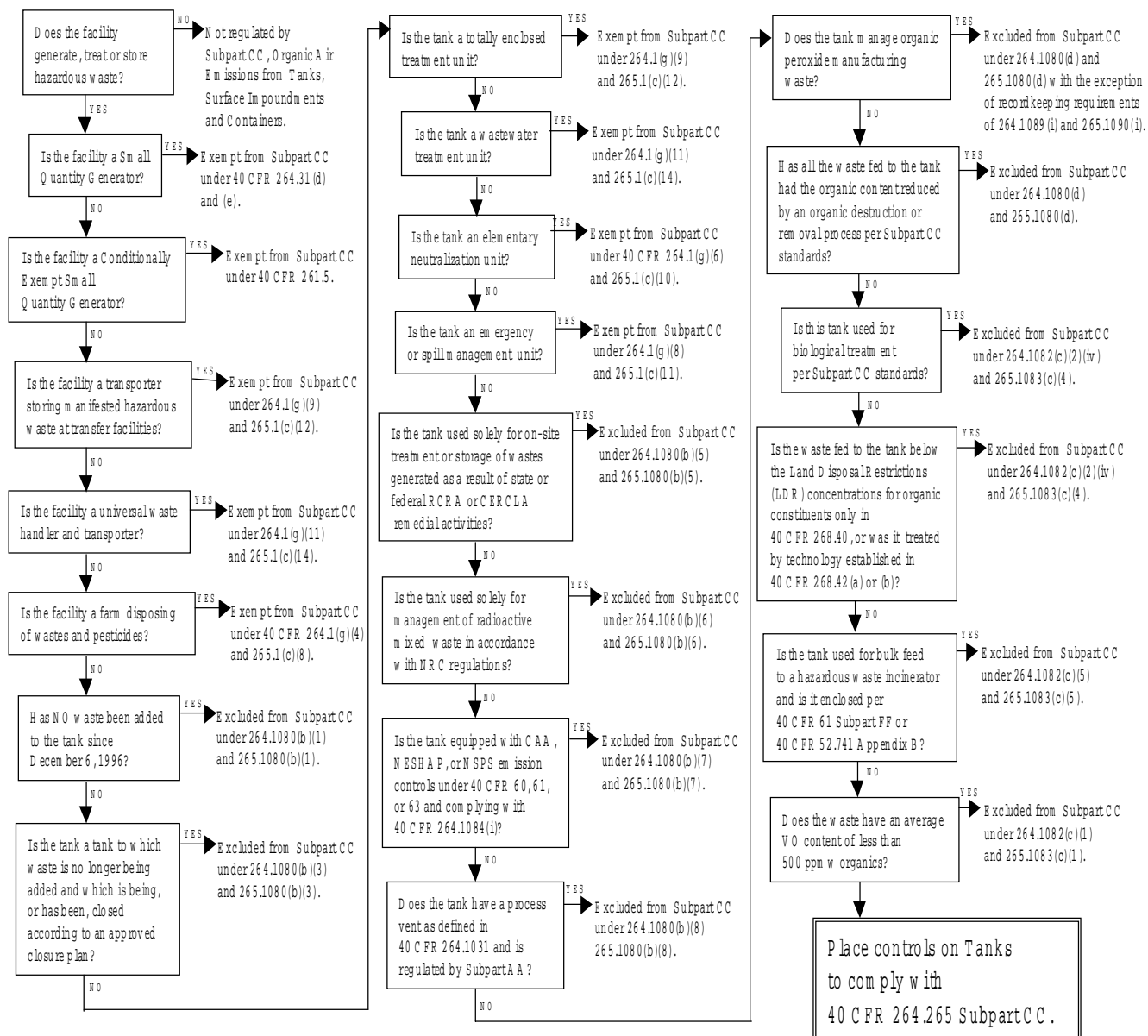
Subpart CC standards apply to any tank, surface impoundment or container which manages hazardous waste and which is subject to permit standards under 40 CFR 264, interim status standards under 40 CFR 265, or less than 90-day Large Quantity Generator (LQG) standards under 40 CFR 262.34(a)(1)(i) or (ii). Certain exemptions or exclusions also may apply. The descriptions of the exemptions and exclusions presented in the following applicability decision tree (Figure 2-1) are abbreviated. Please consult the Code of Federal Regulations references cited in the decision tree for additional detail.

The exclusions presented in Figure 2-1 do not affect the requirement to maintain appropriate records which provide information on the basis of the exclusion that is applied to the unit.

3.0 TANK LEVEL 2 CONTROL REQUIREMENTS

A fixed roof tank connected to a closed-vent system vented to a flare may be subject to Subpart CC control requirements if it manages hazardous waste which has an annual average concentration of VO at the point of waste origination equal to or exceeding 500 ppm by weight (ppmw) as measured by methods specified in 40 CFR 265.1084(a). Equipment such as piping that is associated with the fixed roof tank connected to a closed-vent

Figure 2-1: Applicability Decision Tree for Tanks



system that is vented to a flare may also be subject to RCRA air rules. Piping and associated equipment which feeds the tank may be subject to Subpart BB regulations if it contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight. Other equipment which exists downstream of the Subpart CC affected tank may, or may not, be subject to RCRA air rules depending on the VO concentration of waste in the equipment.

3.1 Level of Control Required for Tanks

Two levels of air pollution emission controls are specified by 40 CFR 264.1084: Tank Level 1 and Tank Level 2. Tank Level 1 controls are typically easier to implement than Tank Level 2 controls.

The level of control required for a tank is determined by the tank design capacity, the maximum organic vapor pressure of the waste in the tank, the extent to which the hazardous waste in the tank is heated and whether the tank is used for a waste stabilization process. To determine if a tank may apply Tank Level 1 controls, the vapor pressure of the waste must be determined as specified in 40 CFR 265.1084(c)(2) to (4).

Criteria for Tank Level 1 Controls

Tank Capacity		Maximum Organic Vapor Pressure		
cubic meters	gallons, approximate	kiloPascals	mm Hg	psi
≥151	≥40,000	5.2	40	0.75
≥75 and < 151	≥20,000 and < 40,000	27.6	207	4.0
< 75	< 20,000	6.6	574	11.1

Reference: 40 CFR 264.1084(b)(1)(i)

To meet Tank Level 1 control requirements, the waste in the tank may not be heated to a temperature above that at which the vapor pressure of the waste was determined. Also, the waste may not be treated using a waste stabilization process [40 CFR 265.1085(b)(ii) and (iii)].

A tank that manages hazardous waste that does not meet the above requirements must use Tank Level 2 controls and therefore must use a control option other than a fixed roof and closure

device to manage VO emissions from the waste in the tank. Tanks which meet the above requirements (vapor pressure/capacity, the tank temperature maintained below the temperature at which the maximum vapor pressure was measured, and no waste stabilization) may use Tank Level 1 or Tank Level 2 controls. If an owner or operator chooses to use a closed-vent system that is vented to a flare to control organic air emissions from a tank, no vapor pressure determination is necessary for the tank because organic air emissions from the tank are already being controlled with a Tank Level 2 control option.

3.2 Operating Requirements Specific to a Fixed Roof Tank Connected to a Closed-Vent System Vented to a Flare



Fixed roof and closure device requirements

The basic requirements for the fixed roof and closure devices on the tank are as follows:

- The fixed roof and closure devices must form a continuous barrier over the entire surface area of the liquid in the tank [40 CFR 264.1084(g)(1)(i) and 265.1085(g)(1)(i)].
- Each opening in the fixed roof that is not vented to the control device must be equipped with a closure device. If the vapor pressure headspace underneath the fixed roof is less than atmospheric pressure, the closure device must be designed to operate such that, when closed, there are no visible cracks, holes, gaps or other open spaces in the closure device or between the closure device and the perimeter of the opening. If the vapor pressure in the headspace is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable emissions as determined by Method 21 [40 CFR 264.1084(g)(1)(ii) and 265.1085(g)(1)(ii)].
- The fixed roof and its closure devices must be made of suitable materials which will minimize exposure of the hazardous waste to the atmosphere [40 CFR 264.1084(g)(1)(iii) and 265.1085(g)(1)(iii)]. Factors such as organic vapor permeability, exposure to wind, moisture and sunlight, exposure to the organic vapors managed in the tank, and the operating procedures for the tank must be considered in the design and construction of the fixed roof and closure devices.
- The fixed roof must be installed, each closure device must be secured in the closed position, and the vapor headspace in the tank must be vented through a closed-vent system to the

operating control device whenever waste is in the tank, except to provide access to the tank for inspection, maintenance, sampling, repair or other activities needed for normal operations of the tank such as the removal of sludge [40 CFR 264.1084(g)(2)(i) and 265.1085(g)(2)(i)]. Following completion of the activity, the tank must resume operations in accordance with these standards.

- Safety devices, as defined in 40 CFR 265.1081, on tanks subject to Tank Level 2 controls may open anytime necessary to avoid an unsafe condition, however they must not be used for routine venting of the vapor space in a tank [40 CFR 264.1084(g)(2)(ii) and 265.1085(g)(2)(ii)].

Closed-vent system requirements

The closed-vent system must be designed and operated in accordance with 40 CFR 264.1087(b) or 265.1088(b) which reference requirements in 40 CFR 264.1033(k) and 265.1033(j) respectively. The standards in 40 CFR 264.1033(k) and 265.1033(j) require that the closed-vent system either operate with no detectable emissions or at a pressure below atmospheric. If complying with no detectable emissions, the closed-vent system must be designed for and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as determined by Method 21 in accordance with 40 CFR 264.1034(b) and 265.1043(b) (Subpart AA standards).

If the closed-vent system associated with the tank includes bypass devices that could be used to divert the vapor stream to the atmosphere before entering the control device, each bypass device must be equipped with either a flow indicator to indicate the presence of flow in the bypass line, or a seal or locking device which prevents the opening of the bypass device without breaking the seal or removing the lock [40 CFR 264.1087(b)(3) and 265.1088(b)(3)]. If a flow meter is used, it must be installed upstream of the inlet to the control device associated with the closed-vent system.

Control device requirements

The control device that is used to destroy the organic emissions from the tank must meet the requirements of 40 CFR 264.1087(c) and 265.1088(c), which specify that the device must be designed and operated to reduce the total organic content of the inlet vapor stream by at least 95 percent by weight. These requirements do not apply during periods of planned routine

maintenance or control device malfunction. Periods of planned routine maintenance of the control device during which the device does not meet the performance requirements shall not exceed 240 hours per year.

The regulations do not require any particular type of control device. Any device which meets the performance requirements can be used. Vapor recovery/vapor reduction devices per 40 CFR 264.1033(b) and 265.1033(b) or combustion control devices per 40 CFR 264.1033(d) and 265.1033(d) are also acceptable under Subpart CC. However, the requirements associated with these technologies are not detailed in this guidance module.

The specific requirements for flares are located in 40 CFR 264.1033(d) and 265.1033(d). The flare must be designed and operated with no visible emissions as determined by Method 22 of 40 CFR 60, Appendix A. The visible emissions cannot exceed a total of five minutes during any two consecutive hours. The flame of the flare must be present at all times. A flare should be equipped with a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame. The flare must have a net heating value for the gas being combusted of 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted. A non-assisted flare must have a net heating value for the gas being combusted of 7.45 MJ/scm (200 Btu/scf). A steam-assisted or nonassisted flare must be designed for and operated with an exit velocity which is less than 18.3 m/s (60 ft/s). However, if the flare operates with a net heating value of 37.3 MJ/scm or greater, the exit velocity may exceed 18.3 m/s but not 122 m/s (400 ft/s). An air-assisted flare must be designed and operated with an exit velocity less than the velocity, V_{\max} . The maximum allowed velocity, V_{\max} is determined from the following:

$$V_{\max} = 8.706 + 0.7084 (H_T)$$

where: H_T = net heating value

3.2.1 Monitoring and inspection requirements [40 CFR 264.1084(g)(3) and 265.1085(g)(3)]

Subpart CC specific monitoring and inspection requirements for a fixed roof tank connected to a closed-vent system vented to a flare are presented in 40 CFR 264.1084(g)(3) and 265.1085(g)(3). Additional monitoring and inspection requirements for tanks are presented in 40 CFR 264 and 265 Subpart J. These additional monitoring and inspection requirements are not discussed in this guidance.

Fixed roof and closure devices

Subpart CC standards require that the fixed roof and its closure devices be visually inspected annually for defects such as visible cracks, holes or gaps in the roof or roof/wall seam, damaged seals or gaskets, and missing hatches, access covers, caps, etc. [40 CFR 264.1084(g)(3)(i) and 265.1085(g)(3)(i)]. The owner or operator must develop and implement a written plan and schedule to perform the inspections and monitoring [40 CFR 264.1088 and 265.1089]. The owner or operator must incorporate this plan and schedule into the facility inspection plan required under 40 CFR 264.15 or 265.15.

The owner or operator is required to perform an initial inspection of the fixed roof and its closure devices on or before the date the tank becomes subject to 40 CFR 264 or 265 Subpart CC standards. Thereafter, the owner or operator must perform the inspections at least once every year except when the cover is designated as an “unsafe to inspect and monitor cover” as described in 40 CFR 264.1084(l) and 265.1085(l) [40 CFR 264.1084(c)(4)(i) and 265.1085(c)(4)(i)].

The owner or operator of a facility that is subject to Subpart CC standards is required to record and maintain certain information in the facility operating record for a minimum of three years. This information must include a unique tank identification number, or other unique descriptor for each tank, and a record for each inspection that was conducted on the tank. The record for each inspection must include the date of the inspection and information on any defects which were identified during the inspection, including the location of the defect, a description of the defect, the date the defect was detected, and the corrective action that was taken to repair the defect. If the repair of the defect was delayed in accordance with the provisions set forth in 40 CFR 264.1085(k)(2) and 265.1085(k)(2), the facility operating record must contain the reason for the delay and the expected date of repair [40 CFR 264.1089(b)(1)(i)(B) and 265.1090(b)(1)(i)(B)].

The conditions provided in 40 CFR 264.1084(l) and 265.1085(l) maintain the requirement of performing the initial inspection and monitoring on the fixed roof and closure devices, but allows for subsequent inspection and monitoring to take place at intervals longer than one year if the inspection and monitoring would expose personnel to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate a cover as an “unsafe to inspect and monitor cover”. For an “unsafe to inspect and monitor cover” inspections may take place

at intervals longer than one year, but inspection and monitoring are still required as frequently as practicable during those times when a worker can safely access the cover [40 CFR 264.1084(l)(ii) and 265.1085(l)(ii)].

If a facility has a Subpart CC affected tank with an “unsafe to inspect and monitor cover” the facility must prepare a written explanation which states the reasons why the cover is unsafe to inspect and monitor. This explanation must be recorded in a log that is kept in the facility operating record [40 CFR 264.1089(g) and 265.1090(g)]. A written plan and schedule which describes the monitoring and inspection of the “unsafe to inspect and monitor cover” must also be recorded in a log that is kept in the facility operating record.

The identification number of tanks which have an “unsafe to inspect and monitor cover” must be recorded and maintained in the facility operating record along with the explanation of the designation and the plan and schedule for monitoring and inspecting the cover [40 CFR 264.1089(g) and 265.1090(g)].

The owner or operator of a facility that is subject to 40 CFR part 264 or 265, Subpart CC and to the control device standards in 40 CFR part 60, Subpart VV, or 40 CFR part 61, Subpart V, may elect to demonstrate compliance with the applicable sections of Subpart CC by documentation either pursuant to Subpart CC, or pursuant to the provisions of 40 CFR part 60, Subpart VV or 40 CFR part 61, Subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by 40 CFR 264.1089 or 265.1090 [40 CFR 264.1089(h) and 265.1090(h)].

In the event that a defect is detected through monitoring and inspection, the defect must be repaired in accordance with the repair requirements set forth in 40 CFR 264.1084(k) and 265.1085(k). These repair requirements are described in Section 3.2.3 below.

Monitoring and inspection records for Subpart CC affected equipment must be maintained according to the requirements of 40 CFR 264.1089 or 265.1090 as applicable.

Closed-vent system [40 CFR 264.1087 and 40 CFR 264.1033(k)]

Closed-vent systems must be designed and operated with no detectable emissions, as indicated by an instrument reading of less

than 500 ppm above background and by visual inspection. The closed-vent system must be monitored to determine this compliance, before the date the facility becomes subject to the regulations of Subpart CC, annually thereafter, and at any other time the Regional Administrator may request. The monitoring must comply with Method 21 in 40 CFR part 60. The instrument must be calibrated before use on each day of its use in accordance with Method 21. The instrument probe must be traversed around all potential interfaces as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

Any seal or locking device which prevents the opening of a bypass device on a closed-vent system must be inspected monthly to verify that the device is maintained in the closed position.

Flares [40 CFR 264.1033 and 40 CFR 265.1034]

- The flare must be monitored according to Method 22, 40 CFR 60, Appendix A, to ensure that it operates with no visible emissions.
- The flare must be equipped with a heat sensing device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame. The readings from the monitoring device must be inspected at least once per operating day.
- The net heating value and the exit velocity must be monitored to ensure the flare is operated in accordance with Subpart CC requirements.

3.2.2 Waste transfer requirements [40 CFR 264.1084(j) and 265.1085(j)]

Waste transfer to a Subpart CC affected tank must be through continuous hard-piping or other closed system that does not allow exposure of the waste to the atmosphere. An individual drain system is considered to be a closed system when it meets the requirements of 40 CFR 63, Subpart RR [40 CFR 264.1084(j)(1) and 265.1085(j)(1)].

As set forth in 40 CFR 264.1084(j)(2) and 265.1085(j)(2), the requirement to use continuous hard-piping or another closed system does not apply under any of the following conditions:

- The waste contains an average VO concentration of less than 500 ppmw as described in 40 CFR 264.1082(c)(1) and 265.1083(c)(1).
- The waste has been treated by an organic destruction or removal process to meet the requirements in 40 CFR 264.1082(c)(2) and 265.1083(c)(2).
- The waste meets Land Disposal Restrictions (LDR) Requirements as presented in 40 CFR 264.1082(c)(4) and 265.1083(c)(4).

3.2.3 Repair requirements [40 CFR 264.1084(k) and 265.1085(k)]

For each defect detected during an inspection, the initial effort at repair must be made no later than five calendar days after detection and repair must be completed as soon as possible but no later than 45 calendar days after detection. An exemption to this repair requirement exists such that the repair may be delayed beyond 45 calendar days if the repair requires the emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. Additional details on this exemption are provided in 40 CFR 264.1084(k)(2) and 265.1085(k)(2).

When a defect is identified the following information must be recorded: the location of the defect, a description of the defect, the date the defect was detected, and the corrective action that was taken to repair the defect. If the repair of the defect was delayed in accordance with the provisions set forth in 40 CFR 264.1085(k)(2) and 265.1085(k)(2), the facility operating record must contain the reason for the delay and the expected date of repair [40 CFR 264.1089(b)(1)(i)(B) and 265.1090(b)(1)(i)(B)].

3.2.4 Recordkeeping requirements [40 CFR 264.1089(b) and 265.1090(b)]

All records that are maintained in accordance with Subpart CC standards, including those stored electronically, must be maintained in a central location and be easily accessible during inspections. The following table summarizes the recordkeeping requirements which apply to a fixed roof tank connected to a closed-vent system vented to a flare.

RECORDKEEPING REQUIREMENTS SUMMARY TABLE

WASTE DETERMINATION REQUIREMENTS	40 CFR
Prepare and maintain records for each determination of the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with 40 CFR 264.1083(c) and 265.1084(c) to demonstrate that Tank Level 1 controls may be applied to the tank. If process knowledge is applied, the records must include the basis for the process knowledge per 40 CFR 265(c)(4). If direct measurement is used according to 40 CFR 265.1084(c)(3), the sampling date and time, the analysis method used, and the analysis results must be maintained in the facility operating record.	264.1089(b)(2)(i) and 265.1090(b)(2)(i)
MONITORING AND INSPECTION REQUIREMENTS	40 CFR
Annual inspection records must be maintained in the facility operating record for a minimum of three years including: a unique tank identification number or other unique descriptor for each tank and a record for each inspection that was conducted on the tank. Inspection records must include the date of the inspection and information about any defects identified during the inspection, including the location of the defect, a description of the defect, the date the defect was detected and the corrective action that was taken to repair the defect. When the repair of a defect is delayed in accordance with 40 CFR 264.1085(k)(2) and 265.1085(k)(2), the facility records must contain the reason for the delay and expected date of repair.	264.1089(b)(1)(i)(B) and 265.1090(b)(1)(i)(B)
UNSAFE TO MONITOR	40 CFR
The identification number of tanks designated as “unsafe to inspect and monitor” must be recorded and maintained in the facility operating record along with the explanation of the designation, and the plan and schedule for monitoring and inspecting the cover.	264.1089(g) and 265.1090(g)
TANKS WITH CLEAN AIR ACT CONTROLS	40 CFR
A facility subject to the control device standards in 40 CFR 60, Subpart VV, or 40 CFR part 61, Subpart V, may demonstrate compliance with Subpart CC by documentation either pursuant to Subpart CC, or pursuant to the provisions of 40 CFR part 60, Subpart VV or 40 CFR part 61, Subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by 40 CFR 264.1089 or 265.1090.	264.1089 and 265.1090
For each hazardous waste tank not using air emission controls specified in 40 CFR 264.1084 through 264.1087 or 265.1085 through 265.1088, in accordance with the provisions 40 CFR 264.1080(b)(7) or 265.1080(b)(7), the owner or operator must record and maintain: 1) Certification that the tank is equipped with and operating air emission controls in accordance with the requirements of applicable Clean Air Act regulations codified under 40 CFR part 60, 61, or 63; and 2) Identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63 with which the tank is in compliance. This information must be maintained in the operating record for as long as the waste management unit is not using the air emission controls specified in 40 CFR 264.1084 and 265.1085 [40 CFR 264.1089(a) and 265.1090(a)], which may exceed the three year recordkeeping requirement that applies to most other information.	264.1089(h) and 265.1090(h)

RECORDKEEPING REQUIREMENTS SUMMARY TABLE

CONTROL DEVICES	40 CFR
Air emission control device design documentation must be maintained in the facility operating record until the air emission control equipment is replaced or otherwise no longer in service.	264.1089(a) and 265.1090(a)

4.0 PERMIT REQUIREMENTS

This section addresses permit requirements for an existing treatment, storage, or disposal facility (TSDF) that meets the Level 2 control requirements for a tank through the use of a fixed roof tank equipped with a closed-vent system vented to a flare. Although the 40 CFR Part 264 requirements are self-implementing (i.e., the requirements apply to all affected facilities prior to revising the RCRA Part B permit), eventually all affected interim status and permitted TSDFs will be issued a RCRA Part B permit that incorporates the requirements of 40 CFR Part 264. In addition, any existing TSDF that becomes newly subject to the regulations or any new TSDF that is subject to the regulations must submit a permit application and receive a permit incorporating the RCRA Part B requirements prior to construction and operation of the newly affected unit or facility.

Prior to promulgation of the Subpart CC requirements on December 6, 1994, 40 CFR Section 270.4 stipulated that compliance with a RCRA permit constituted compliance with the provisions of RCRA. In other words, facilities subject to the RCRA regulations were not required to comply with changes to the RCRA regulations until such revised requirements were incorporated into the facility's RCRA permit by the permitting authority. This provision is commonly known as "permit-as-a-shield". The December 6, 1994 FEDERAL REGISTER changed the "permit-as-a-shield" practice by amending Section 270.4 to require that owners/operators of TSDFs that have been issued final RCRA permits prior to October 6, 1996, comply with the air emissions standards under Part 265, Subparts AA, BB and CC until the facility's permit is reviewed or reissued. Therefore, the TSDF owner or operator is not required to initiate a permit modification to add the requirements of 40 CFR Part 264, Subparts AA, BB or CC for existing units, but must comply with the applicable requirements of 40 CFR Part 265, Subparts AA, BB and CC by the compliance date of December 8, 1997.

The RCRA permit for affected TSDFs will be revised to incorporate the applicable requirements of 40 CFR Part 264, Subparts AA, BB and CC whenever the permit is reopened or subject to renewal, or when a TSDF owner or operator submits

a Class 3 modification request pertaining to an existing unit or addition of a new unit subject to the Subpart AA, BB, or CC requirements. Interim status TSDFs which have submitted Part B applications to the U.S. EPA, but have not received a draft permit as of December 5, 1996, are required to modify the Part B application to incorporate the applicable requirements of 40 CFR Part 264, Subparts AA, BB, and CC prior to the draft being issued by the U.S. EPA. If the TSDF has received a draft permit as of December 5, 1996, the applicable requirements of 40 CFR Part 264 Subparts AA, BB, and CC must be incorporated into the final permit determination. The U.S. EPA Regional Administrator will establish, on a case-by-case basis, the deadline for submittal of the revised Part B permit application.

4.1 Permit Content - General

Development of the permit application is critical to receipt of a permit that is acceptable to the facility. It must be remembered that the permit application is the primary source of information for the permitting authority to use in preparing the permit. Although the regulations specify the minimum information that is required to be included in the permit application, the applicant may want to consider including additional optional information. In this manner the permitting authority will have all the information necessary for the development of complete, accurate and acceptable permit terms and conditions. Please contact your U.S. EPA or State permit writer for a permit writers checklist or for permit writing guidance.

Examples of additional information that an owner or operator may want to submit with an application that addresses a fixed roof tank equipped with a closed-vent system vented to a flare include:

- Description of the monitoring device used to continuously record temperature.
- Description of operating procedures (i.e., how the closure device will be kept closed except during periods of routine maintenance or inspections).
- Description of schedules and procedures for tank inspections, including example log forms.
- Description of the procedures followed in attempting to repair a defect.

- Description of the procedures used to transfer waste.
- Documentation to demonstrate that the fixed roof and its closure device are designed to form a continuous barrier over the entire surface area of the hazardous waste.
- Documentation that the fixed roof and its closure device are made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere.

The incorporation of this type of information into the permit application may be beneficial to the permit application review process and result in the process proceeding smoothly so that the permit can be issued as quickly as possible.

4.2 Permit Content - Tank Standards

Design features, operating requirements, monitoring provisions, inspection procedures, and recordkeeping and repair provisions may vary depending on the control level that is being used to control air emissions from the tank. The following are the requirements that will be included in a permit for a fixed roof tank equipped with a closed-vent system vented to a flare. At a minimum, the following requirements will appear as terms and conditions in the RCRA permit.

4.2.1 Design requirements [40 CFR 264.1087 and 264.1033(c)]

The closed-vent system must route all gases to the flare and must be designed to operate with no detectable emissions or designed to operate at a negative pressure. A negative pressure system must be equipped with at least one pressure gauge to verify that negative pressure is being maintained when the control device is operating. When the closed-vent system includes a bypass device, the bypass device must be equipped with either a flow indicator or a seal locking device.

The control device must be designed to achieve a 95 percent control efficiency. The flare must operate with no visible emissions. The flame of the flare must be present at all times. The flare must have a net heating value for the gas being combusted of 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted. A nonassisted flare must have a net heating value for the gas being combusted of 7.45 MJ/scm (200 Btu/scf). A steam assisted or nonassisted flare must be designed for and operated with an exit velocity which is less than 18.3 m/s (60 ft/s). However, if the flare operates with a net heating value of 37.3 MJ/scm or greater, the exit velocity may exceed 18.3 m/s but not 122 m/s (400 ft/s). An air-assisted flare must be designed and

operated with an exit velocity less than the velocity, V_{\max} . The maximum allowable velocity, V_{\max} , is determined from the following:

$$V_{\max} = 8.706 + 0.7084 (H_T)$$

where: H_T = net heating value

4.2.2 Operating requirements [40 CFR 264.1084(g) and 264.1087]

Whenever a hazardous waste is in a Level 2 tank, the closure devices must be secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device at all times, except as follows:

- When performing routine inspection, maintenance, or other activities needed for normal operations. Periods of planned routine maintenance must be limited to 240 hours per year. The 95 percent control requirement does not apply during periods of routine maintenance or malfunctions.
- When removing accumulated sludge or other residues from the bottom of the tank.
- Whenever it is necessary to open a safety device to avoid an unsafe condition.

4.2.3 Inspection requirements [40 CFR 264.1084(g), 264.1087, and 264.1033]

Fixed roof tanks equipped with a closed-vent system vented to a flare used for a Level 2 control must be inspected on or before the date that the tank becomes subject to the Subpart CC requirements. This inspection includes a visual inspection of the tank and closure devices to check for visible cracks, holes, or gaps in the roof sections or between the roof and tank wall, broken, cracked, or damaged seals or gaskets on closure devices, and broken or missing hatches, access covers, caps or other closure devices. After the initial inspection, the tank must be inspected at least once per year unless the inspection would expose a worker to dangerous, hazardous, or other unsafe conditions. If an unsafe condition exists, the owner or operator must prepare a written explanation, and develop a written plan and schedule to inspect the tank and closure devices.

A closed-vent system operating with no detectable organic emissions must be inspected by conducting an initial leak detection monitoring of the closed-vent system before the system becomes subject to Subpart CC. The procedures in 40 CFR

264.1034(b) must be used to demonstrate that there are no detectable emissions. After the initial monitoring, the system must be inspected as follows: Joints, seams and other connections that are permanently or semi-permanently sealed must be visually inspected at least once per year. The owner or operator must also monitor after replacement or repair of any component. Other components must be monitored annually and at other times as required by the Regional Administrator.

A closed-vent system that operates under negative pressure must be inspected visually before the system becomes subject to Subpart CC. After the initial monitoring, the system must be visually inspected at least once per year.

**4.2.4 Repair requirements
[40 CFR 264.1084(k) and
264.1033(l)(3)]**

When a defect is detected during an inspection of a tank, the owner or operator must make an initial effort to repair the defect no later than five calendar days after detection and the repair must be completed as soon as possible but no later than 45 calendar days after detection. The repair may be delayed beyond this 45 day period if the owner or operator determines that the defect requires the emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the repair must be performed during the next time the process or unit that is generating the waste managed in the tank stops operation.

When a defect is detected during an inspection of the closed-vent system (as indicated by an instrument reading greater than 500 ppmv above background or by visual inspection) the detectable emission must be controlled as soon as possible, but no later than 15 calendar days after the emission is detected. A first attempt at repair must be made no later than five days after the emission is detected. Delay of repair is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that the fugitive emissions resulting from immediate repair would be greater than those likely to result from delay of repair. Control device malfunctions must be corrected as soon as possible.

**4.2.5 Recordkeeping requirements
[40 CFR 264.1089]**

All information required by Subpart CC must be recorded and maintained in the operating record for a period of three years. Records of air emission control equipment design information must

be maintained in the operating record until the control equipment is replaced or taken out of service.

Records that must be maintained for the fixed roof tank include a tank identification number, and a record for each inspection performed including date of inspection, location of any defects detected, description of any defect detected, and the date corrective action was taken. If the repair is delayed, records of the reason for the delay and the expected date of repair also need to be maintained.

Records that must be maintained for the closed-vent system and control device include a signed certification that the control device is designed to operate at the performance level documented by a design analysis or by performance tests. If a design analysis is used, records must include specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of Air Pollution Training Institute (APTI) Course 415 or other engineering texts. A description of the control device design and a certification by the owner or operator that the control equipment meets the applicable specifications must also be retained. If a performance test is used, records must include a performance test plan.

The following information must be recorded on a semi-annual basis: a description of planned routine maintenance for the control device that is anticipated to be performed over the next 6-month period and a description of the planned routine maintenance that was performed for the control device during the previous 6-month period. Only those planned activities that would cause the control device to not meet the applicable requirements need to be recorded.

For unexpected control device malfunctions that cause the control device to not meet applicable requirements, the following information must be recorded: the occurrence and duration of each malfunction, the duration of each period during a malfunction when gases are vented to the control device while it is not properly functioning, and actions taken during the periods of malfunctions to restore the control device to its normal operation.

Additional recordkeeping requirements for a fixed roof tank connected to a closed-vent system vented to a flare are included in Section 3.2.4 of this Guidance Module.

**4.2.6 Reporting requirements
[40 CFR 264.1090 (b)]**

If the closed-vent system or control device is operated for 24 hours or longer in non-compliance with the applicable operating values defined in 40 CFR 264.1035(c)(4), the owner or operator must submit a semiannual report to the Regional Administrator which details each occurrence. The report must include the EPA identification number, facility name and address, an explanation of why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance. The report must be signed and dated by an authorized representative of the owner or operator.

**4.2.7 Monitoring requirements
[40 CFR 264.1088 and
264.1033]**

A facility using a fixed roof tank equipped with a closed-vent system vented to a flare must install, calibrate, maintain and operate according to the manufacturer's specifications a device to continuously monitor control device operation. The flare must be operated with no visible emissions as determined by Method 22, 40 CFR 60, Appendix A. The flame of the flare must be present at all times. This is to be monitored with a heat sensing device equipped with a continuous recorder. The net heating value and exit velocity of the flare must be monitored to ensure the flare operates in accordance with 40 CFR 264.1033(d) and 256.1033(e).

Each monitoring device must be inspected once each operating day and in the event of a monitoring device malfunction, corrective actions need to be implemented immediately.

Web Site

Clarification and additional information concerning EPA regulations can be obtained by contacting the EPA through the internet at the following web site:

www.epa.gov/region07