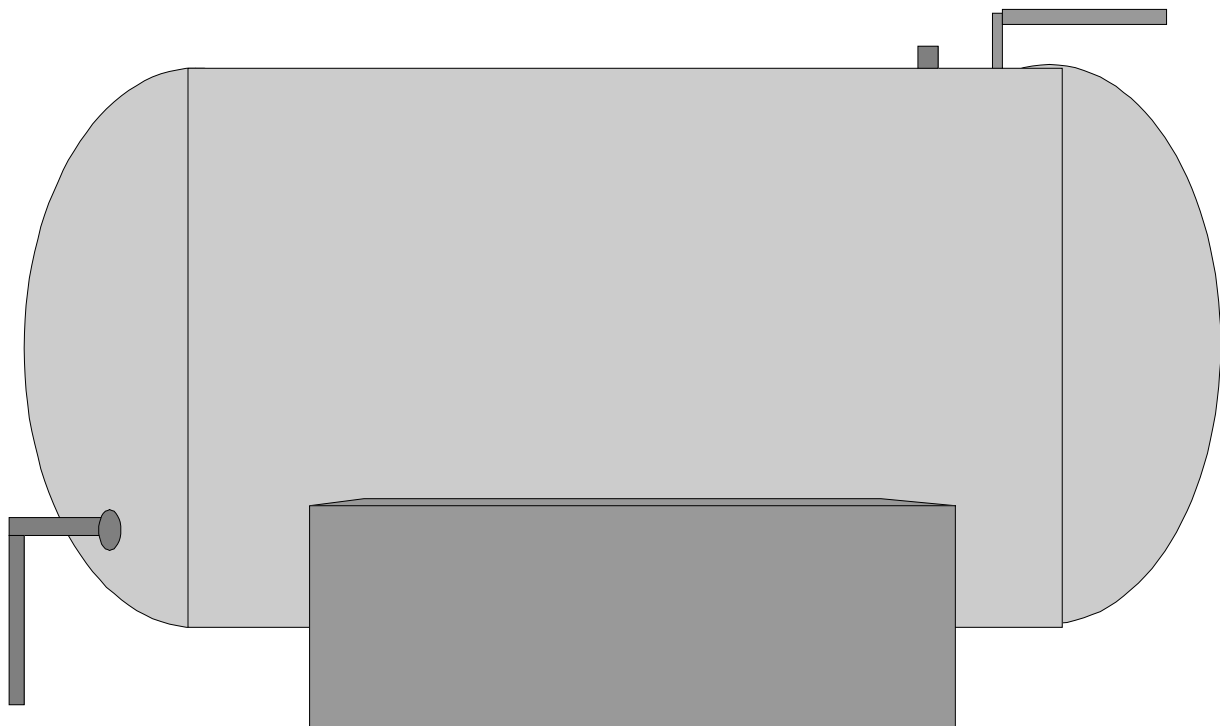




**U.S. EPA REGION 7
ORGANIC AIR EMISSIONS ASSISTANCE**

**RCRA SUBPART CC GUIDANCE MODULE
FOR
TANK LEVEL 2 CONTROLS**

PRESSURE TANK



U.S. EPA REGION 7

GUIDANCE MODULE FOR TANK LEVEL 2 CONTROLS

PRESSURE TANK



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

GUIDANCE MODULE FOR TANK LEVEL 2 CONTROLS

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1.0 INTRODUCTION

1.1 About this Guidance Module

“Tanks which meet Tank Level 2 control criteria may use a pressure tank 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 pressure tank. **Tanks which meet Tank Level 2 control criteria may use a pressure tank 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 pressure tank 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

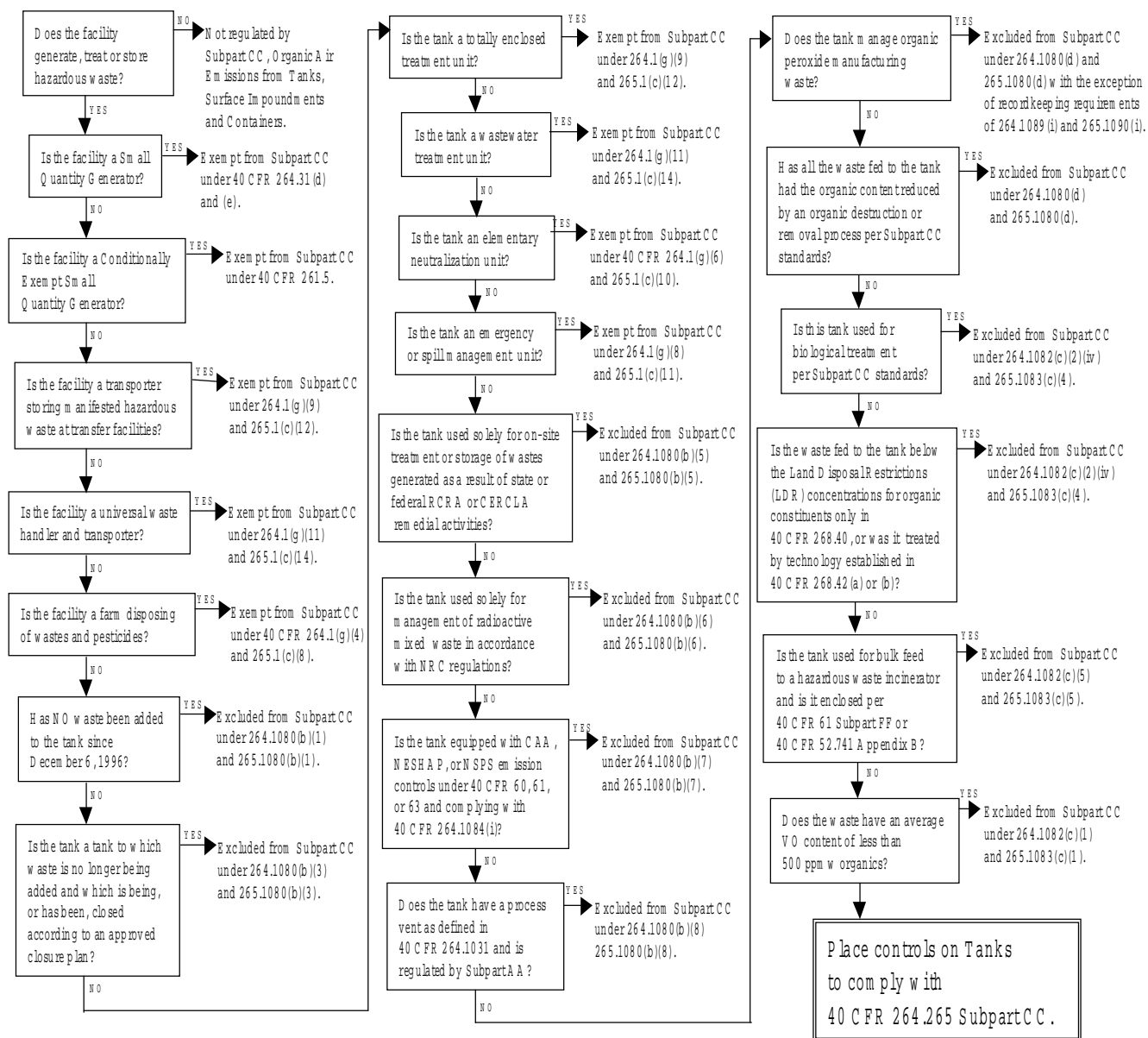
Subpart CC standards apply to any tank, surface impoundment or container which manages hazardous waste and which is subject to permit standards under 40 CFR 264, interim status standards under 40 CFR 265, or less than 90-day Large Quantity Generator (LQG) standards under 40 CFR 262.34(a)(1)(i) or (ii). 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 pressure tank 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 pressure tank may also be subject to RCRA air rules. Piping and associated equipment which feeds the tank may be subject to Subpart BB regulations if

Figure 2-1: A Applicability Decision Tree for Tanks



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	76.6	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 tank 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 pressure tank 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 Pressure Tank

The basic requirements for the pressure tank as specified in 40 CFR 264.1084(h) and 265.1085(h) are as follows:

- The pressure tank must be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during the filling of the tank to its design capacity.
- All tank openings must be equipped with closure devices designed to operate with no detectable emissions.
- Whenever a hazardous waste is in the tank, the tank must be operated as a closed system that does not vent to the atmosphere except in the event that a safety device is required to open to avoid an unsafe condition.

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 pressure tank 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.



The owner or operator must visually inspect the pressure tank and its closure devices for defects that could result in air pollutant emissions. Such defects include, but are not limited to holes, tears or other openings in the floating roof, the rim seal detached from the floating roof, all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank, broken, cracked or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps or other closure devices. These visual inspections must be performed on an annual basis.

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.

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 another 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 at 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); or,
- The waste meets LDR Requirements as presented in 40 CFR 264.1082(c)(4) and 264.1083(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 pressure tank.

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

RECORDKEEPING REQUIREMENTS SUMMARY TABLE

TANKS WITH CLEAN AIR ACT CONTROLS	40 CFR
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 264.2084 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)
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 pressure tank. 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 pressure tank 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 pressure tank is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during the filling of the tank to its design capacity.
- Documentation that the pressure tank is made of a suitable material 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, 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 pressure tank. These design, operating, monitoring, inspection, repair, recordkeeping and reporting requirements are summarized only for the control option that uses a pressure tank. 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 pressure tank must be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during the filling of the tank to its design capacity. All tank openings must be equipped with the closure devices designed to operate with no detectable emissions. Whenever a hazardous waste is in the tank, the tank must be operated as a closed system that does not vent to the atmosphere except in the event that a

safety device is required to open to avoid an unsafe condition.

**4.2.2 Operating Requirements
(40 CFR 264.1084(g) and
264.1087)**

Whenever a hazardous waste is in the tank, the tank must be operated as a closed system that does not vent to the atmosphere except in the event that a safety device is required to open to avoid an unsafe condition.

**4.2.3 Inspection Requirements
(40 CFR 264.1084(g),
264.1087, and 264.1033)**

The owner or operator must visually inspect the pressure tank and its closure devices for defects that could result in air pollutant emissions. Such defects include, but are not limited to holes, tears or other openings in the tank, broken, cracked or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps or other closure device. These visual inspections must be performed on an annual basis.

**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 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.

**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 a pressure 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.

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 six-month period and a description of the planned routine maintenance that was performed for the control device during the previous six-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 pressure tanks are included in Section 3.2.4. of this Guidance Module.

4.2.6 Reporting requirements [40 CFR 264.1090 (b)]

If the 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 semi-annual 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]

If a control device is associated with the tank, it must be installed, calibrated, maintained and operated according to the manufacturer's specifications a device to continuously monitor control device operation. The process parameter or parameters that indicate proper operation and maintenance of the control device must be continuously monitored.

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