TREATMENT & STORAGE FACILITY INSPECTION - SUBCH. CC LEVEL 2 & 3 REQUIRMENTS FOR CONTAINERS & TANKS

This Inspection Form, used in conjunction with the TREATMENT AND STORAGE FACILITY INSPECTION REPORT, is for the inspection of facilities that are treating or storing hazardous waste in containers subject to ch. NR 664 subch. CC level 2 or 3 requirements or tanks subject to ch. NR 665 subch. CC level 2 requirements.

Revision: 06/29/2016
WASTE & MATERIALS MANAGEMENT PROGRAM

Section 1: Container 2 Standards

A. The facility manages hazardous waste containers with a design capacity >119 gallons that are in light material service. If NO, go to Section 2.		
B. Any of the following controls are used on Level 2 containers: 1. Container meets applicable US DOT packaging requirements. 2. Each potential leak interface where organic vapor leakage could occur on the container, cover and closure device has been checked to determine that no detectable organic emissions (< 500 ppmv) are occurring. 3. The facility has demonstrated within the last 12 months that the containers are vapor-tight using Method 27 in appendix A of 40 CFR part 60.		664.1086(4)(a)
C. If the potential leak interface on the containers were checked, BOTH of the following were met: 1. Checks were made on the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and, the sealing seat interface on a spring-loaded, pressure-relief valve. 2. The test was performed when the container was filled with a material having a VO concentration representative of the hazardous waste expected to be stored in the container.		664.1086(4)(a)
D. The facility maintains a copy of the procedure used to determine that containers >119 gallons in size that do not meet DOT requirements are not managing hazardous waste in light material service.		664.1086(3)(e)
E. Level 2 controls are used when transferring waste in or out of the container that minimize exposure to the atmosphere (submerged-fill pipe, vapor-recovery system, etc.) to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices.		664.1086(4)(b)
F. If the container is filled to the final level in one continuous operation, the closure devices are promptly secured in the closed position when the filling operation is concluded.		664.1086(4)(c)1.a
G. If the container is batch filled, the closure devices are promptly secured in a closed position upon filling the container to the intended final level, or when the batch loading is completed and ANY of the following first occurs: 1. No additional material will be added within 15 minutes. 2. The person performing the loading operation leaves the immediate vicinity of the container. 3. The process generating the waste shuts down.		664.1086(4)(c)1.b
H. If containers are opened to remove hazardous waste, closure devices are secured in the closed position upon completion of a batch removal and either of the following first occurs: 1. No additional materials will be removed within 15 minutes. 2. The person removing the waste leaves the immediate vicinity of the container.		664.1086(4)(c)2.b
I. If access to the inside of the container is needed to perform routine activities other than the transfer of hazardous waste (e.g., sampling), the closure device is secured in the closed position promptly after completing the activity.		664.1086(4)(c)3
J. If the container is equipped with a pressure relief device that vents to the atmosphere, the device meets ALL of the following conditions: 1. Designed to operate with no detectable organic emissions when in the closed position. 2. Closed when the internal pressure is within the specified operating range. 3. Opens and vents to the atmosphere only for the purpose of maintaining internal pressure according to the design specifications.		664.1086(4)(c)4
K. Safety valves are only opened to avoid an unsafe condition.		664.1086(4)(c)5
L. When a defect is detected, initial repair efforts are made within 24 hours of detection.		664.1086(4)(d)3

TREATMENT & STORAGE FACILITY INSPECTION - SUBCH. CC LEVEL 2 & 3 REQUIRMENTS FOR CONTAINERS & TANKS

Section 1: Container 2 Standards

M. Repairs are completed within 5 days, or the waste is removed from the container which is not used until the defect is repaired.		664.1086(4)(d)3
N. When first taking possession of a container that will not be emptied within 24 hours, the facility visually inspects the container, cover and closure device for visible cracks, holes, gaps or other open spaces on or before the date the facility accepts the container (e.g., signs the manifest).		664.1086(4)(d)1
O. If the container remains at the facility for one year or more, the container, its cover and closure devices are visually inspected initially and at least once every 12 months for cracks, gaps or other open spaces.		664.1086(4)(d)2
P. The facility maintains the results of the inspections in an inspection log for at least 3 years.		664.0015(4)

Section 2: Container 3 Standards

A. The facility manages hazardous waste in containers having a design capacity >26 gallons during a waste stabilization process when hazardous waste is exposed to the atmosphere. If NO, go to Section 3.		
B. The container is vented directly through a closed-vent system to a control device, or the container is vented inside an enclosure which is exhausted through a closed-vent system to a control device.		664.1086(5)(a)
C. If the container is vented inside an enclosure, the enclosure is operated according to the criteria for permanent total enclosures found in Method 204 in appendix M of 40 CFR part 51.		664.1086(5)(b)1
D. Records for the most recent set of calculations and measurements verifying the enclosure meets the criteria for a permanent total enclosure in Method 204 in appendix M of 40 CFR part 51 are maintained at the facility.		664.1089(4)(a)
E. Level 3 controls are used when wastes are transferred in or out of the container that minimize exposure to the atmosphere (e.g., submerged-fill pipe, vapor-recovery system, etc.) to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices.		664.1086(5)(f)

Section 3: Tank Level 2 Standards - Fixed Roof Tank with an Internal Floating Roof

A. The facility manages hazardous waste in a fixed roof tank with an internal floating roof subject to subch. CC requirements. If NO, go to Section 4.		
B. Documentation describing the floating roof design is maintained at the facility.		664.1089(2)(b)2
C. The internal floating roof floats on the liquid surface except when the floating roof is supported by the leg supports.		664.1084(5)(a)1
D. The internal floating roof is equipped with a continuous seal between the wall of the tank and the floating roof edge that meets EITHER of the following: 1. The single continuous seal is a liquid-mounted seal or a metallic shoe seal. 2. Two continuous seals are mounted one above the other.		664.1084(5)(a)2

Section 3: Tank Level 2 Standards - Fixed Roof Tank with an Internal Floating Roof

E. Each opening in a non-contact internal floating roof has a projection below the liquid surface, except for automatic bleeder vents and rim space vents.		664.1084(5)(a)3
F. Each opening in the internal floating roof has a gasketed cover or lid, except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells and stub drains.		664.1084(5)(a)3
G. Each penetration of the internal floating roof for sampling has a slit fabric cover covering at least 90% of the opening.		664.1084(5)(a)3
H. Each automatic bleeder vent and rim space vent is gasketed.		664.1084(5)(a)3
I. Each penetration for passage of a ladder has a gasketed sliding cover.		664.1084(5)(a)3
J. Each penetration for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or gasketed sliding cover.		664.1084(5)(a)3
K. When the floating roof is resting on leg supports, the process of filling or emptying is continuous and completed as soon as practical.		664.1084(5)(b)
L. When the roof is floating, automatic bleeder vents are closed at all times, except when the roof is floated off or being landed on leg supports.		664.1084(5)(b)
M. Before filling, each cover, access hatch, gauge float well or lid is fastened or bolted closed.		664.1084(5)(b)
N. Rim space vents are set to open only when the internal floating roof is not floating or the pressure beneath the rim exceeds the manufacturer's recommended setting.		664.1084(5)(b)
O. The internal floating roof and its closure devices are visually inspected for the following defects that could cause air emissions: 1. The internal floating roof is not floating on the surface of the liquid. 2. Liquid has accumulated on the top of the internal floating roof. 3. A portion of the roof seals have detached from the roof rim. 4. Holes, tears, or other openings are visible in the seal fabric. 5. Gaskets do not close off the hazardous waste surface from the atmosphere. 6. The slotted membrane has more than 10% open area.		664.1084(5)(c)1
P. If the roof has 2 continuous seals mounted one above the other, the internal floating roof, primary seals, secondary seals, gaskets, slotted membranes, and sleeve seals are visually inspected each time the tank is emptied and degassed; and, at least every 5 years.		
Q. Components of the floating roof are visually inspected through openings on the fixed-roof at least once every 12 months after the initial fill.		664.1084(5)(c)2
R. The internal floating roof, primary seal, secondary seal, gaskets, slotted membranes and sleeve seals are visually inspected each time the tank is emptied and degassed; and, at least every 10 years.		664.1084(5)(c)2
S. The facility gives written notification to the department 30 days before filling an emptied and degassed tank, except for an unplanned inspection.		664.1084(5)(c)4

Section 3: Tank Level 2 Standards - Fixed Roof Tank with an Internal Floating Roof

T. If the facility conducted an unplanned inspection, the facility notified the department by telephone and followed up with a written explanation of why the unplanned inspection occurred so it is received 7 calendar days before refilling the tank.		664.1084(5)(c)4
U. First efforts of repair are made within 5 calendar days of detection and completed no later than 45 calendar days unless repair is delayed.		664.1084(5)(c)5
V. Repair is delayed until the next time the process or unit generating the waste stops operation because the tank must be emptied for repair and there is no alternate tank capacity.		664.1084(5)(c)5
W. ALL of the following inspection records are maintained for at least 3 years: 1. The tank ID#. 2. The date of inspection. 3. The location and description of the defect. 4. The date the problem was detected and the corrective action taken. 5. The reason repair was delayed and the date of completion, if applicable.		664.1084(5)(c)6

Section 4: Tank Level 2 Standards - External Floating Roof

A. The facility manages hazardous waste in a tank with an external floating roof subject to subch. CC requirements. If NO, go to Section 5.		
B. The external floating roof is designed to float on the liquid surface except when the floating roof is supported by the leg supports.		664.1084(6)(a)1
C. The floating roof is equipped with 2 continuous seals, one above the other between the wall of the tank and the roof edge, which meet ALL of the following requirements: 1. The total area of the gaps between the tank wall and the primary seal does not exceed 212 cm2/m of tank diameter and the width of any portion of the gaps does not exceed 3.8 cm. 2. The primary or lower seal is a liquid-mounted seal or a metallic shoe seal. 3. A metallic shoe seal used as a primary seal has one end extending into the liquid and the other end extending a vertical distance of at least 61 cm above the liquid surface. 4. The secondary seal is mounted above the primary seal and the annular space between the floating roof and the wall of the tank is covered. 5. The total area of gaps between the tank wall and the secondary seal does not exceed 21.2 cm2/m of tank diameter and the width of any portion of these gaps does not exceed 1.3 cm.		664.1084(6)(a)2
D. All openings in a non-contact external floating roof project below the liquid surface, except for automatic bleeder vents and rim space vents.		664.1084(6)(a)3
E. Each opening in the roof is equipped with a gasketed cover, seal or lid, except for automatic bleeder vents, rim space vents, roof drains and leg sleeves.		664.1084(6)(a)3
F. Each access hatch and gauge float is equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.		664.1084(6)(a)3
G. Each automatic bleeder vent and rim space vent is equipped with a gasket.		664.1084(6)(a)3
H. Each roof drain that empties into the liquid in the tank is equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening.		664.1084(6)(a)3

Section 4: Tank Level 2 Standards - External Floating Roof

I. Each unslotted and slotted guide pole well is equipped with a gasketed sliding cover or a flexible fabric sleeve seal.		664.1084(6)(a)3
J. Each unslotted guide pole is equipped with a gasketed cap on the end of the pole.		664.1084(6)(a)3
K. Each slotted guide pole is equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.		664.1084(6)(a)3
L. Each gauge hatch and sample well is equipped with a gasketed cover.		664.1084(6)(a)3
M. When the floating roof is resting on the leg supports, the process of filling or emptying is continuous and completed as soon as practical.		664.1084(6)(b)
N. Except for automatic bleeder vents, rim space vents, roof drains and leg sleeves, each opening in the roof is secured and maintained in the closed position, except when open for access.		664.1084(6)(b)
O. Covers are fastened or bolted on each access hatch and gauge float well when secured in the closed position.		664.1084(6)(b)
P. Automatic bleeder vents are set to closed when the roof is floating, except when the roof is being floated off or being landed on the leg supports.		664.1084(6)(b)
Q. Rim space vents are set to open when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.		664.1084(6)(b)
R. The cap on the end of each unslotted guide pole is secured in the closed position except when measuring the liquid level or sampling the liquid.		664.1084(6)(b)
S. The cover on each gauge hatch or sample well is secured in the closed position except when opened for access.		664.1084(6)(b)
T. The primary and secondary seals completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion, except during inspections.		664.1084(6)(b)
U. ALL of the following inspections are conducted on the external floating roof: 1. Gaps between the tank wall and the primary seal are measured within 60 days of initial operation and then at least once every 5 years. 2. Gaps between the tank wall and secondary seal are measured within 60 days of initial operation and then at least once every year. Note: If the tank does not hold hazardous waste for one year or more, subsequently adding hazardous waste to the tank is considered an initial operation per NR 664.1084(6)(c)1.c.		664.1084(6)(c)1
V. Facility records include a description of the floating roof design and dimensions of the tank.		664.1089(2)(b)3

Section 4: Tank Level 2 Standards - External Floating Roof

W. For each seal gap inspection, ALL the following records are maintained at the facility: 1. The date the measurements were performed. 2. The raw data obtained for the measurements. 3. The calculations of the total gap surface area. 4. A description of repairs that were made. 5. The date repairs were made. 6. The date the tank was emptied, if necessary.		664.1089(2)(b)3
X. The external floating roof and its closure devices are visually inspected for the following defects that could cause air pollutant emissions: 1. Holes, tears or other openings in the rim seal or seal fabric of the floating roof. 2. A rim seal detached from the floating roof. 3. All or a portion of the floating roof deck being submerged below the surface of the liquid in the tank. 4. Broken, cracked or otherwise damaged seals or gaskets on closure devices. 5. Broken or missing hatches, access covers, caps or other closure devices.		664.1084(6)(c)2.a
Y. A visual inspection was performed on the external floating roof and its closure devices on or before the date the tank became subject to CC requirements and at least once every year thereafter.		664.1084(6)(c)2.b
Z. If more than a year lapses between visual inspections, ALL of the following have been met: 1. The external floating roof or closure device has been designated as "unsafe to inspect and monitor". 2. A written explanation stating the reasons why the floating roof or closure device is unsafe to visually inspect or monitor has been prepared. 3. A written plan and schedule for inspecting and monitoring the roof or closure device has been developed and implemented which allows for inspections as frequently as practical when a worker can gain safe access.		664.1084(6)(c)2.b
ZA. The facility gives written notification to the department at least 30 days before filling an emptied and degassed tank or measuring external floating roof seal gaps, except for an unplanned inspection.		664.1084(6)(c)3
ZB. If the facility conducted an unplanned inspection, the facility notified the department by telephone and followed up with a written explanation of why the unplanned inspection occurred so it is received 7 calendar days before refilling the tank.		664.1084(6)(c)3
ZC. First efforts of repair are made within 5 calendar days of detection and completed no later than 45 calendar days, unless repair is delayed.		664.1084(6)(c)2.c
ZD. Repair is delayed until the next time the process or unit generating the waste stops operation because the tank must be emptied for repair and there is no alternate tank capacity.		664.1084(6)(c)2.c
ZE. ALL of the following inspection records are maintained for at least 3 years: 1. The tank ID#. 2. The date of inspection. 3. The location and description of the defect. 4. The date the problem was detected and the corrective action taken. 5. The reason repair was delayed and the date of completion, if applicable.		664.1084(6)(c)2.d

Section 5: Tank Level 2 Standards - Tanks Vented to a Control Device

A. The facility manages hazardous waste in a tank subject to subch. CC requirements that vents to a control device. If NO, go to Section 6.		

Section 5: Tank Level 2 Standards - Tanks Vented to a Control Device

B. The tank is covered with a fixed roof and vents directly through a closed-vent system to a control device.		664.1084(7)(a)
C. The fixed roof and closure devices form a continuous barrier over the entire surface area of the liquid.		664.1084(7)(a)1
D. Each opening in the fixed roof that is not vented to the control device is equipped with a closure device according to the following: 1. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure, the closure device operates with no visible cracks, holes or other open spaces. 2. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure, the closure devices operate with no detectable organic emissions (<500 ppmv).		664.1084(7)(a)2
E. The fixed roof and closure devices are made of suitable materials to minimize exposure of hazardous waste to the atmosphere and maintain integrity throughout their intended service life.		664.1084(7)(a)3
F. The fixed roof is installed with each closure device secured in the closed position except to conduct routine inspections or remove sludge from the tank.		664.1084(7)(b)1
G. The vapor headspace underneath the fixed roof is vented to the control device except to conduct routine inspections or remove sludge from the tank.		664.1084(7)(b)1
H. Safety devices are only opened to avoid an unsafe condition.		664.1084(7)(b)2
I. The fixed roof and closure devices are visually inspected for defects that could result in air pollutant emissions, including ALL of the following: 1. Visible cracks, holes or gaps in the roof sections or between the roof and the tank wall. 2. Broken, cracked or otherwise damaged seals or gaskets on closure devices. 3. Broken or missing hatches, access covers, caps or other closure devices.		664.1084(7)(c)1
J. A visual inspection was performed on the external floating roof and its closure devices on or before the date the tank became subject to CC requirements and is conducted at least once every year thereafter, unless the cover is unsafe to inspect and monitor.		664.1084(7)(c)3
K. If a cover has been designated as "unsafe to inspect and monitor", BOTH of the following are met: 1. A written explanation stating the reasons why the cover is unsafe to visually inspect or monitor has been prepared. 2. A written plan and schedule for inspecting and monitoring the cover has been developed and implemented which allows for inspections as frequently as practical during those times when a worker can gain safe access.		664.1084(7)(c)3
L. First efforts of repair are made within 5 calendar days of detection and completed no later than 45 calendar days, unless repair is delayed.		664.1084(11)
M. Repair is delayed until the next time the process or unit generating the waste stops operation because the tank must be emptied for repair and there is no alternate tank capacity.		664.1084(11)

Section 5: Tank Level 2 Standards - Tanks Vented to a Control Device

N. ALL of the following inspection records are maintained for at least 3 years: 1. The tank ID#. 2. The date of inspection. 3. The location and description of the defect. 4. The date the problem was detected and the corrective action taken. 5. The reason repair was delayed and the date of completion, if applicable.		664.1089(2)(a)

Section 6: Tank Level 2 Standards - Pressure Tank

A. The facility manages hazardous waste in a pressure tank subject to subch. CC requirements. If NO, go to Section 7.		
B. When the tank is filled to its design capacity, venting to the atmosphere does not occur due to the compression of the vapor headspace in the tank.		664.1084(8)(a)
C. All tank openings are equipped with closure devices designed to operate with no detectable organic emissions (< 500 ppmv).		664.1084(8)(b)
D. The tank is operated as a closed system that does not vent to the atmosphere except when a safety device is opened to avoid an unsafe condition, or when the tank is purged.		664.1084(8)(c)
E. If the pressure tank is purged, the purge stream is directed to the closed-vent system and control device.		664.1084(8)(c)

Section 7: Enclosure Vented through a Closed-Vented System to a Combustion Control Device

A. The tank is located inside an enclosure designed and operated according to Method 204 of appendix M of 40 CFR part 51. If NO, go to Section 8. (NR 664.1084(9)(a))		
B. The most recent set of calculations and measurements verifying that the enclosure meets the criteria for a permanent total enclosure in Method 204 in appendix M of 40 CFR part 51 are maintained at the facility.		664.1089(2)(b)4

Section 8: Standards for Closed Vent Systems and Control Devices - Vapor Incinerators

A. The control device is a vapor incinerator. If NO, go to Section 9.		
B. The vapor incinerator is designed and operated to result in any of the following: (NR 664.1033(3)) 1. Reduce the organic emissions by 95 weight percent or greater. 2. Achieve a total organic compound concentration of 20 ppmv, expressed as the sum of actual compounds on a dry basis corrected to 3% oxygen. 3. Provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C.		664.1087(3)(a)2
C. A temperature monitoring device with a continuous recorder is maintained and operated to continuously monitor the operation of the thermal or catalytic vapor incinerator. (NR 664.1033(6)(b))		664.1087(3)(g)

Section 8: Standards for Closed Vent Systems and Control Devices - Vapor Incinerators

D. If performance tests were conducted, the total organic compound concentrations and mass flow rates entering and exiting the control device are determined according to ALL of the following: (NR 664.1034(3)) 1. Method 2 in appendix A of 40 CFR part 60 is used to determine the velocity and volumetric flow rate. 2. Method 18 in appendix A of 40 CFR part 60 is used to determine organic content. 3. Each performance test consists of 3 separate runs at least one hour each, under the highest load or capacity expected. 4. Total organic mass flow rate and annual total organic emission rates are calculated correctly. 5. The total organic emissions from all affected process vents are calculated by adding the hourly total organic mass emission rates and by adding the annual total organic mass emission rates.		664.1087(3)(e)3
E. The facility maintains information indicating the following performance testing facilities were made available: (NR 664.1034(3)) 1. Adequate sampling ports for the required test methods. 2. A safe sampling platform. 3. Safe access to the sampling platform. 4. Utilities for sampling and testing equipment.		664.1087(3)(e)3
F. All process information, including representative conditions, used during the performance tests are recorded. (NR 664.1034(3))		664.1087(3)(e)3
G. The time-weighted average of the results from 3 runs is used to determine compliance. (NR 664.1034(3))		664.1087(3)(e)3
H. If engineering calculations are used for a thermal vapor incinerator, the design analysis addresses both of the following: (NR 664.1035(2)(d)3.) 1. Considers the vent stream composition, constituent concentrations and flow rate. 2. Establishes the design minimum, the average temperature in the combustion zone and the combustion zone residence time.		664.1087(3)(e)4
I. If engineering calculations are used for a catalytic vapor incinerator, the design analysis addresses BOTH of the following: (NR 664.1035(2)(d)3.) 1. Considers the vent stream composition, constituent concentrations and flow rate. 2. Establishes the design minimum and average temperatures across the catalyst bed inlet and outlet.		664.1087(3)(e)4

Section 9: Standards for Closed Vent Systems and Control Devices - Condensers

A. The control device is a condenser. If NO, go to Section 10.		
B. EITHER of the following devices is maintained and operated to continuously monitor the operation of the condenser. (NR 664.1033(6)(b)6.) 1. A monitoring device with a continuous recorder to measure the organic compound concentration level in the exhaust vent stream from the condenser. 2. A temperature monitoring device with a continuous recorder.		664.1087(3)(g)

Section 9: Standards for Closed Vent Systems and Control Devices - Condensers

C. If performance tests were conducted, total organic compound concentrations and mass flow rates entering and exiting the control device are determined according to ALL of the following: (NR 664.1034(3)) 1. Method 2 in appendix A of 40 CFR part 60 is used to determine the velocity and volumetric flow rate. 2. Method 18 in appendix A of 40 CFR part 60 is used to determine organic content. 3. Each performance test consists of 3 separate runs at least one hour each, under the highest load or capacity expected. 4. Total organic mass flow rate and annual total organic emission rate are calculated correctly. 5. The total organic emissions from all affected process vents are calculated by adding the hourly total organic mass emission rates and by adding the annual total organic mass emission rates.		664.1087(3)(e)3
D. All process information, including representative conditions, used during the performance tests are recorded. (NR 664.1034(3))		664.1087(3)(e)3
E. The time-weighted average of the results from 3 runs is used to determine compliance. (NR 664.1034(3))		664.1087(3)(e)3
F. Facility records include information that the following performance testing facilities were made available: (NR 664.1034(3)) 1. Adequate sampling ports for the required test methods. 2. A safe sampling platform. 3. Safe access to the sampling platform. 4. Utilities for sampling and testing equipment.		664.1087(3)(e)3
G. If engineering calculations are used for a condenser, the design analysis addresses BOTH of the following: (NR 664.1035(2)(d)3.) 1. Considers the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. 2. Establishes the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream and design average temperatures of the coolant fluid at the condenser inlet and outlet.		664.1087(3)(e)4

Section 10: Standards for Closed Vent Systems and Control Devices - Boilers or Process Heater

A. The control device is a boiler or process heater. If NO, go to Section 11.		
B. The boiler or process heater is designed and operated to result in ANY of the following: (NR 664.1033(3)) 1. Reduce the organic emissions by 95 weight percent or greater. 2. Achieve a total organic compound concentration of 20 ppmv, expressed as the sum of actual compounds on a dry basis corrected to 3% oxygen. 3. Provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C.		664.1087(3)(a)2
C. A temperature monitoring device with a continuous recorder is maintained and operated to continuously monitor a boiler or process heater with a design heat input capacity less than 44 megawatts. (NR 664.1033(6)(b)4.)		664.1087(3)(g)
D. A monitoring device with a continuous recorder that measures a parameter indicating good combustion operating practices is maintained and operated to monitor the operation of a boiler or process heater with a design heat input capacity of 44 megawatts or more. (NR 664.1033(6)(b)5.)		664.1087(3)(g)

Section 10: Standards for Closed Vent Systems and Control Devices - Boilers or Process Heater

E. The boiler or process heater meets ANY of the following. If YES, go to Section 11. 1. The design heat input capacity is >= 44 megawatts. 2. The vent stream is introduced into the boiler or process heater with the primary fuel. 3. The boiler or industrial furnace has been issued an interim or operating license to burn hazardous waste and is designed and operated according to subch. H of ch. NR 666.		664.1087(3)(e)1
F. If performance tests were conducted, the total organic compound concentrations and mass flow rates entering and exiting the control device are determined according to ALL of the following: (NR 664.1034(3)) 1. Method 2 in appendix A of 40 CFR part 60 is used to determine the velocity and volumetric flow rate. 2. Method 18 in appendix A of 40 CFR part 60 is used to determine organic content. 3. Each performance test consists of 3 separate runs at least one hour each, under the highest load or capacity expected. 4. Total organic mass flow rate and annual total organic emission rate are calculated correctly. 5. The total organic emissions from all affected process vents are calculated by adding the hourly total organic mass emission rates and by adding the annual total organic mass emission rates.		664.1087(3)(e)3
G. All process information, including representative conditions, used during the performance tests are recorded. (NR 664.1034(3))		664.1087(3)(e)3
H. The time-weighted average of the results from 3 runs is used to determine compliance. (NR 664.1034(3))		664.1087(3)(e)3
I. Facility records include information that the following performance testing facilities were made available: (NR 664.1034(3)) 1. Adequate sampling ports for the required test methods. 2. A safe sampling platform. 3. Safe access to the sampling platform. 4. Utilities for sampling and testing equipment.		664.1087(3)(e)3
J. If engineering calculations are used for a boiler or process heater, the design analysis addresses the following: (NR 664.1035(2)(d)3.) 1. Considers the vent stream composition, constituent concentrations and flow rate. 2. Establishes the design minimum and average flame zone temperatures; and, combustion zone residence time. 3. Describes the method and location where the vent or equipment stream is introduced into the combustion zone.		664.1087(3)(e)4

Section 11: Standards for Closed Vent Systems and Control Devices - Flares

A. The control device is a flare. If NO, go to Section 12.		
B. No emissions are visible except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. (NR 664.1033(4))		664.1087(3)(a)3
C. The flare is present at all times. (NR 664.1033(4))		664.1087(3)(a)3
D. The flare is steam-assisted, air-assisted or non-assisted. (NR 664.1033(4))		664.1087(3)(a)3

Section 11: Standards for Closed Vent Systems and Control Devices - Flares

E. If the flare is steam or air-assisted, the net heating value of the gas being combusted is 300 Btu/scf or more. (NR 664.1033(4))		664.1087(3)(a)3
F. If the flare is non-assisted, the net heating value of the gas being combusted is 200 Btu/scf or more. (NR 664.1033(4))		664.1087(3)(a)3
G. If the flare is air assisted, the exit velocity is less than Vmax. (NR 664.1033(4))		664.1087(3)(a)3
H. If the flare is steam-assisted or non-assisted, the exit velocity of the flare is ONE of the following: (NR 664.1033(4)) 1. Less than 60 ft/sec. 2. Between 60 ft/sec and 400 ft/sec if the net heating value of the gas is greater than 1000 Btu/scf. 3. Less than the maximum velocity, Vmax, and less than 400 ft/sec.		664.1087(3)(a)3
I. Compliance with the visible emissions requirement has been determined using Method 22 in appendix A of 40 CFR part 60. (NR 664.1033(5))		664.1087(3)(e)2
J. The following have been calculated correctly: (NR 664.1033(5)) 1. Net heating value of the gas being combusted. 2. Actual exit velocity. 3. Maximum allowed velocity or Vmax.		664.1087(3)(e)2
K. The flare is equipped with a heat sensing monitoring device and continuous recorder that meets BOTH of the following: (NR 664.1033(6)(b)3.) 1. Indicates the continuous ignition of the pilot flame. 2. The device is maintained and operated to continuously monitor the operation of the flare.		664.1087(3)(g)
L. If engineering calculations are used for a flare, the design analysis considers the vent stream composition, constituent concentrations, flow rate, and design and operation standards (no visible emissions). (NR 664.1035(2)(d)3.)		664.1087(3)(e)4

Section 12: Standards for Closed Vent Systems and Control Devices - Carbon Adsorption Units

A. The control device is a carbon adsorption unit. If NO, go to Section 13.		
B. The carbon adsorption system is designed and operated to reduce the total organic content of the inlet vapor stream by at least 95% by weight.		664.1087(3)(c)
C. If the facility uses a fixed-bed carbon adsorption system that regenerates the carbon bed in the control device, the carbon is replaced with fresh carbon at regular, pre-determined time intervals that are shorter than the carbon service life. (NR 664.1035(2)(d)3.)		664.1087(3)(c)1
D. If the carbon bed is not regenerated in the control device, the existing carbon is replaced with fresh carbon on a regular basis using EITHER of the following procedures: (NR 664.1033(8)) 1. The concentration level of organic compounds in the exhaust vent stream is monitored and the existing carbon is immediately replaced when carbon breakthrough is indicated. 2. The existing carbon is replaced at a regular pre-determined time interval that is less than the design carbon replacement interval.		664.1087(3)(c)1
E. If the concentration level of organic compounds in the exhaust vent stream is monitored, the monitoring frequency is either daily or at an interval no more than 20% of the time required to consume the total carbon working capacity, whichever is longer.		664.1087(3)(c)1

Section 12: Standards for Closed Vent Systems and Control Devices - Carbon Adsorption Units

F. The facility documents that carbon removed from the carbon adsorption system is managed as a hazardous waste by ONE of the following methods: (NR 664.1033(14)) 1. Regenerated in a thermal treatment unit licensed or permitted as a miscellaneous unit; or, in compliance with NR 665 subch AA, BB, CC or the Clean Air Act requirements. 2. Incinerated in a licensed or permitted hazardous waste incinerator. 3. Burned in a licensed or permitted boiler or industrial furnace.		664.1087(3)(c)2
G. One of the following devices is maintained and operated to continuously monitor the operation of a carbon adsorption system that regenerates the carbon bed in the control device: (NR 664.1033(6)(b)7.) 1. A monitoring device with a continuous recorder to measure the organic compound concentration level in the exhaust vent stream from the carbon bed. 2. A monitoring device equipped with a continuous recorder to measure a parameter indicating the carbon bed is regenerating on a regular predetermined time cycle.		664.1087(3)(g)
H. If performance tests are done, the total organic compound concentrations and mass flow rates entering and exiting the control device are determined according to ALL of the following: (NR 664.1034(3)) 1. Method 2 in appendix A of 40 CFR part 60 is used to determine the velocity and volumetric flow rate. 2. Method 18 in appendix A of 40 CFR part 60 is used to determine organic content. 3. Each performance test consists of 3 separate runs at least one hour each, under the highest load or capacity expected. 4. Total organic mass flow rate and annual total organic emission rate are calculated correctly. 5. The total organic emissions from all affected process vents are calculated by adding the hourly total organic mass emission rates and by adding the annual total organic mass emission rates.		664.1087(3)(e)3
I. All process information, including representative conditions, used during the performance tests are recorded. (NR 664.1034(3))		664.1087(3)(e)3
J. The time-weighted average of the results from 3 runs is used to determine compliance. (NR 664.1034(3))		664.1087(3)(e)3
K. Facility records include information that the following performance testing facilities were made available: (NR 664.1034(3)) 1. Adequate sampling ports for the required test methods. 2. A safe sampling platform. 3. Safe access to the sampling platform. 4. Utilities for sampling and testing equipment.		664.1087(3)(e)3
L. If engineering calculations are used for a carbon adsorption system that regenerates the carbon bed on-site in the control device, the design analysis considers the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. (NR 664.1035(2)(d)3.)		664.1087(3)(e)4
M. If engineering calculations are used for a carbon adsorption system that regenerates the carbon bed on-site in the control device, the design analysis establishes ALL of the following: (NR 664.1035(2)(d)3.) 1. Design exhaust vent stream organic compound concentration level. 2. Number and capacity of carbon beds. 3. Type and working capacity of activated carbon used for carbon beds. 4. Design total steam flow over the period of each complete carbon bed regeneration cycle. 5. Duration of the carbon bed steaming and cooling or drying cycles. 6. Design carbon bed temperature after regeneration. 7. Design carbon bed regeneration time. 8. Design service life of carbon.		664.1087(3)(e)4

Section 12: Standards for Closed Vent Systems and Control Devices - Carbon Adsorption Units

N. If engineering calculations are used for a carbon adsorption system that does not regenerate the carbon bed on-site in the control device, the design analysis considers the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. (NR 664.1035(2)(d)3.)		664.1087(3)(e)4
O. If engineering calculations are used for a carbon adsorption system that does not regenerate the carbon bed on-site in the control device, the design analysis establishes ALL of the following: (NR 664.1035(2)(d)3.) 1. The design outlet organic concentration level. 2. Capacity of carbon bed. 3. Type and working capacity of activated carbon used for carbon bed and design carbon replacement interval, based on the total carbon working capacity of the control device and source operating schedule.		664.1087(3)(e)4

Section 13: General Standards for All Closed Vent Systems and Control Devices

A. If the control device is other than a thermal vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system, BOTH of the following are met: 1. The control device is designed and operated to reduce the total organic content of the inlet vapor stream by at least 95% by weight. 2. The control device is operated and maintained according to the identified process parameters for the unit.		664.1087(3)(d)
B. Malfunctions of the control device system are corrected as soon as practicable after their occurrence to minimize excess emissions of air pollutants.		664.1087(3)(b)5
C. Periods of planned routine maintenance that result in the control device not meeting the design and operating standards are limited to 240 hours or less per year.		664.1087(3)(b)1
D. The facility demonstrates that planned routine maintenance is <= 240 hours per year by recording, on a semi-annual basis, ALL of the following information: 1. A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months, including the type of maintenance necessary and the length of maintenance periods. 2. A description of the planned routine maintenance that was performed during the previous 6 months, including the type of maintenance performed and the total number of hours during the 6 months that the control device did not meet the operating standard.		664.1087(3)(b)4
E. For unexpected control device system malfunctions, the following information is recorded when the control device does not meet design specifications: 1. The occurrence and duration of each malfunction. 2. The duration of each period during a malfunction when gases, vapors or fumes are vented through the control device when it is not functioning. 3. Actions taken during periods of malfunction to restore a malfunctioning control device to its normal manner of operation.		664.1089(5)(f)
F. Gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or malfunctions, except when venting is necessary to avoid an unsafe condition or implement maintenance.		664.1087(3)(b)6
G. The closed vent system is operated according to EITHER of the following: (NR 664.1033(11)) 1. With no detectable emissions as indicated by an instrument reading of <500 ppmv above background and by visual inspection. 2. At negative pressure with a pressure gauge or other pressure measuring device readily accessible to verify operation at negative pressure.		664.1087(2)(b)

Section 13: General Standards for All Closed Vent Systems and Control Devices

H. Testing has been conducted to determine if the control device is operating with no detectable emissions (< 500 ppm) according to ALL of the following: (NR 664.1033(11)(a), NR 664.1034(2)) 1. Monitoring; performance criteria and daily calibration procedures of the detection instrument; determination of background levels; and, determination of potential leak interfaces are according to Method 21 in appendix A of 40 CFR part 60. 2. Calibration gases consist of zero air with <10 ppm hydrocarbons and a mixture of <10,000 ppm methane or n-hexane in air. 3. The arithmetic difference between the maximum instrument reading and background level is compared to 500 ppm to determine compliance.		664.1087(2)(b)
I. If the closed-vent system is designed to operate with no detectable emissions (<500 ppmv), proper operation is ensured by ALL of the following: (NR 664.1033(12)(a)) 1. Initial leak detection monitoring was conducted on or before the date the system was subject to subch. CC to demonstrate the unit operates with no detectable emissions. 2. At least annually, visually inspect closed-vent system joints, seams or other connections that are permanently or semi-permanently sealed for defects that could result in air pollutant emissions. 3. Monitor components or connections after repair or replacement to demonstrate they are operating without detectable emissions. 4. Monitor other components or connections annually, unless components are designated as unsafe.		664.1087(2)(d)
J. If components are designated as unsafe, the exposure to an immediate danger has been documented and a written plan for monitoring during safe-to-monitor times is followed. (NR 664.1033(12)(a))		664.1087(2)(d)
K. If the closed-vent system is designed to operate at negative pressure, it was visually inspected for defects (i.e., holes in piping or loose connections) that could result in air pollutant emissions by the date the system was subject to subch. CC and annually thereafter. (NR 664.1033(12)(b))		664.1087(2)(d)
L. Devices used for continuous monitoring are inspected at least once each monitoring day.		664.1087(3)(g)
M. If the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device is equipped with EITHER of the following: 1. A flow indicator installed at the inlet to the bypass line at a point upstream of the control device inlet. 2. A seal or locking device placed on the mechanism (lever or handle) controlling the bypass device position when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock.		664.1087(2)(c)
N. The first attempt at repair is made within 5 calendar days and is corrected as soon as possible, but no later than 15 calendar days after the emissions are detected, unless repair is delayed. (NR 664.1033(12)(c))		664.1087(2)(d)
O. Complete repair of the equipment is delayed to the end of the next process unit shutdown due to EITHER of the following: (NR 664.1033(12)(c)) 1. Repair is technically infeasible without a process unit shutdown. 2. Emissions from immediate repair would be greater than those resulting from delay of repair.		664.1087(2)(d)

Section 14: Standards for Closed Vent Systems and Control Devices - Recordkeeping Requirements

A. ALL of the following information is recorded when a leak is detected: (NR 664.1033(12)(c)4., NR 664.1035(3)(j)) 1. Instrument ID number, the closed-vent system component ID number and the operator name, initials or ID number. 2. Date the leak was detected and the date of the first attempt to repair. 3. Date the leak was successfully repaired. 4. Maximum instrument reading after the leak is successfully repaired or determined to be nonrepairable. 5. Notation of "repair delayed" and the reason for delay if the leak is not repaired within 15 days.		664.1087(2)(d)
B. Monitoring, operating and inspection records are kept for 3 years from the date of each occurrence.		664.1035(4)
C. The facility maintains a certification signed and dated by the owner/operator stating that the control device is designed to operate at the performance level documented by a design analysis or by performance tests when the container or tank is operating at capacity.		664.1089(5)(a)
D. The operating record includes ALL of the following for flow indicators and continuous monitoring devices: (NR 664.1035(3)(b)) 1. Identification of operating parameters. 2. Description of monitoring devices. 3. Diagram of monitoring sensor locations.		664.1089(5)(d)
E. If test data was used to determine the organic removal efficiency or total organic compound concentration achieved by the control device, the facility has a performance test plan that includes ALL of the following: (NR 664.1035(2)(c) 1. Description of how it was determined that the planned test was conducted when the hazardous waste management unit was operating at the highest load or capacity level reasonably expected to occur. 2. Estimated or design flow rate and organic content of each vent stream. 3. Definition of the acceptable operating ranges of key processes and control device parameters. 4. Detailed engineering description of the closed vent system and control device, including the manufacture's name, model number, type, dimensions, equipment capacity and construction materials. 5. Detailed description of sampling and monitoring procedures, including the equipment used; sampling and monitoring locations in the system; frequency of sampling and monitoring; and analytical procedures.		664.1089(5)(c)
F. If a design analysis is used, records include ALL of the following design documentation for the closed-vent system and control device: (NR 664.1035(2)(d) 1. A list of all information references and sources used in preparing the documentation. 2. Records, including the date, for each compliance test showing that the closed vent system operates with no detectable emissions. 3. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis represent the conditions that exist when the unit is operating at the highest load reasonably expected to occur. 4. A statement certifying that the control device is designed to operate at 95% efficiency or more, or the total organic emissions are reduced to below 3 lb/hr and 3.1 tons/yr. 5. The certification statement is signed and dated by the owner or operator, or the manufacturer or vendor certified that the control equipment meets design specifications. 6. If performance tests are used to demonstrate compliance, all of the test results. 7. Design analysis, specifications, drawings, schematics, piping and instrument diagrams prepared by the owner or operator or provided by the manufacturer or vendor that describes the control device design information.		664.1089(5)(b)

Section 14: Standards for Closed Vent Systems and Control Devices - Recordkeeping Requirements

G. The operating record includes a description and the date of each modification that has been made to the closed-vent system or control device design. (NR 664.1035(3)(a))		664.1089(5)(d)
H. Records are maintained according to the following schedules: 1. Air emission control equipment design documentation is maintained until the air emission control equipment is replaced or otherwise no longer in service. 2. Information regarding the organic peroxide exclusion is maintained for as long as the container or tank is not using air emission controls. 3. Information regarding certification with the Clean Air Act and applicable requirements are maintained as long as the facility complies with the alternate Clean Air Act requirements.		664.1089(1)
I. If a control device operated continuously in noncompliance for 24 hours or longer; or, a flare operated with visible emissions for 5 minutes or longer, the facility submitted a semiannual written report to the department which included the following: 1. The EPA ID#, facility name and address for the facility. 2. A description of each occurrence of noncompliance during the previous 6-month period. 3. An explanation of why the control device could not be returned to compliance within 24 hours. 4. Actions taken to correct the noncompliance. 5. Signature and date by an authorized representative.		664.1090(3)